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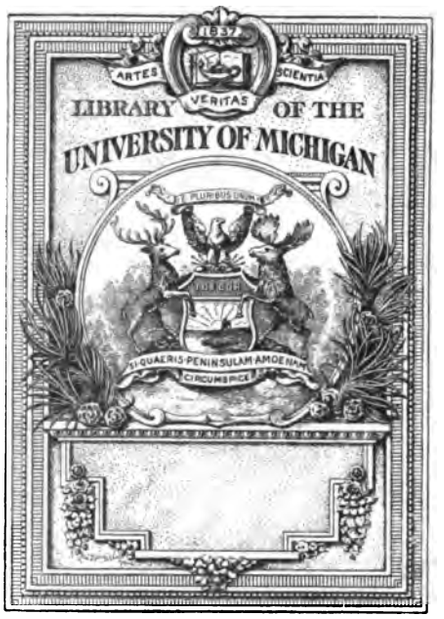
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Report on State Encouragement to Industry in Hungary by Mr. Percy Bennett, Commercial Attaché to Her Majesty's Embassy at Vienna.

(Received at Foreign Office, June 16, 1900.)

PART I.—*General Considerations.*

It may, perhaps, be quoted as a generally recognised principle in the national economy of modern States that agricultural and industrial development should proceed as far as possible side by side. A country, which is either purely agricultural or purely industrial, is incomplete from an economic point of view, and it is undoubtedly only by the proper co-operation of these two factors that an ideal economic position can be reached.

Since the re-establishment of the Hungarian Constitution in 1867, this principle, as far as the economic policy of the country is concerned, has been the guiding star of successive Hungarian Statesmen, who have spared no efforts to encourage the founding of national industries in a country which but a few years ago was purely agricultural.

Industrial development the guiding principle of Hungary's economic policy.

A glance at the census returns is sufficient to show the essentially agrarian character of Hungary. No less than 76·83 per cent. of its total population is formed by an agricultural community, whilst the industrial classes only number 5·26 per cent. This disproportion is still more clearly marked by comparing the total number of agricultural labourers with the total number of workers of all kinds. In this case the percentage of agricultural labourers is no less than 78·46 per cent.

Hungary still only an agricultural State.

A further proof of the agricultural character of Hungary is furnished by the trade returns, which show that about 75 per cent. of Hungary's importations consist of manufactured goods, whilst some 85 per cent. of her exports represent either agrarian produce or articles manufactured directly from such produce.

It is in the face of conditions such as these that Hungary has had to strive, and is still striving, in the direction of industrial development. The Government, whilst recognising the fact that industrial activity must primarily be the outcome of private initiative, has nevertheless from time to time framed laws, the object of which has been to encourage industrial enterprise and to attract foreign capital. The first Statute of this kind was the Law XLIV. of 1881, which was replaced by the Law XIII. of

The founding of national industries encouraged by a system of legislation granting State privileges and exemptions.

1890, which in its turn gave way to the Law at present in force, viz., Law XLIX. of 1899. The general aim of all these laws has been to encourage the development of existing industries as well as the creation of new ones by means of a system of State privileges and exemptions granted for a longer or shorter period, according to the circumstances of the case in question. By far the most comprehensive of these Laws, is that which came into force on January 1, 1900, and which is known as Law XLIX. of 1899. A complete translation of this Law with explanatory notes is appended.

Obstacles to Hungary's industrial development.

Opinions may differ as to the soundness of an economic policy which grants systematic State assistance to industry. But, as far as Hungary is concerned, the special economic conditions of the country must be taken into due consideration. Briefly stated, there are two great obstacles in the way of industrial development in Hungary. The first is the competition of the old-established industries of Austria, against whose products, owing to the commercial union between the two countries, no customs barrier exists; and the second is the scarcity of skilled industrial workmen. Conditions such as these amply account for the special aid given by the Hungarian Government to encourage the foundation of home industries.

Industrial progress during the nine years ending December 31, 1898.

Statistics show that these efforts are meeting with considerable success. During the nine years ending December 31, 1898, no fewer than 1,609 new industrial establishments commenced operations in Hungary, with a total capital of 206,706,814 crowns. These establishments, which employ some 45,000 hands, may be classified as producing the following articles:—

Articles.	Number.
Alimentary products (principally steam flour mills)	666
Wooden articles	182
Building materials	172
Chemical products	112
Distillery „	97
Metal goods	76
Ceramic goods	65
Textiles	54
Machines	34
Electricity	21
Skins	13
Paper	12
Glass	11
Furniture	11
Clothes	5
Jewellery	2
Scientific instruments	2
Sundry articles	74
Total	1,609

Although it must not be inferred that these results are entirely due to State influence, yet there is no doubt that the assistance

afforded by the Government has been a powerful factor in establishing so satisfactory a record.

Migration of textile manufacturers from Austria to Hungary principally caused by uncertainty respecting renewal of the Ausgleich.

Of recent years the attention of industrial circles has been called to the special inducements held out by the Hungarian Government to the silk and textile manufacturers of Austria to transfer their factories across the border. In many instances the inducements held out have met with success, and several firms from Bohemia and elsewhere have established themselves in Trans-Leithan territory. But it may be said that this migration has been principally caused by the uncertainty attending the constitutional renewal of the commercial portion of the Ausgleich and the consequent fear that the customs union between Austria and Hungary may one day cease, in which case a customs barrier would be erected by Hungary against Austria, and the silk and textile industries of Austria would thus be in danger of losing their principal market.

Hungary requires capital for the development of her industries and will welcome it from any quarter.

Although it is true that special inducements have been offered from time to time to Austrian manufacturers to settle in Hungary, yet it would seem that there is no desire on the part of the Hungarian Government to limit their welcome to Cis-Leithan capitalists. A portion of a speech recently delivered in the Chamber of Deputies at Budapest by Monsieur de Hegedüs, the Hungarian Minister of Commerce, in reference to the activity of the department over which he presides is particularly instructive in this respect. In the course of his remarks, his Excellency stated that the industrial movement in Hungary afforded exceptional scope for Austrian enterprise and for Austrian capital. But that if Austria failed to utilise the opportunity offered by Hungary's industrial development then the working of this vast field must be left to others. The Minister of Commerce went so far as to say, that he considered that Austrian, German, or British capital, which was constantly seeking its way to transoceanic countries, would find, as far as security and ultimate profits are concerned, far better employment in industrial investments in Hungary. His Excellency concluded his remarks by stating that the Government was fully determined to establish industries in Hungary quite irrespective of the source whence the necessary capital came.

The uncertain nature of the Customs and Commercial Union between Austria and Hungary.

Reference has already been made to the fact that certain Austrian manufacturers have established factories in Hungary with a view to preserving the Trans-Leithan market in the event of the non-renewal of the commercial portion of the Ausgleich. This part of the Ausgleich forms the Customs and Commercial Treaty between Austria and Hungary and has to be renewed every 10 years. It was in 1867 that absolute free trade between the two halves of the Dual Monarchy was established, and although there is probably no desire on the part of responsible statesmen in either half of the Empire for a rupture of these economic relations, yet it must be borne in mind that should the political dead-lock in Austria prevent the renewal of the Ausgleich in constitutional form, then economically speaking, at the end of 1907 Austria and

Hungary cease to be one State. It is quite natural under these circumstances that Hungary should be busily preparing for such an emergency by energetically fostering her infant industries, and should economic separation ensue and a customs barrier against Austria be erected, then those manufacturers who are at the time already established in Hungary would probably reap a rich harvest. It is this possibility which makes the situation so interesting for capitalists, who may be contemplating investment in Hungarian industrial undertakings, and it may, therefore, not be out of place to give a clearer idea of the position of affairs by briefly recapitulating the negotiations which took place in the spring of last year between the two Governments with reference to the renewal of the Ausgleich.

Recapitulation of the Ausgleich negotiations of 1899.

To rightly understand the nature of these negotiations, it must be borne in mind that Austria, owing to Parliamentary obstruction, not having been in a position to constitutionally renew the Ausgleich at the right time, an agreement was made with the Hungarian Premier, Baron Banffy, in the summer of 1898 to the effect that the compact should remain in force until the end of 1903, and that if Austria was not in a position by that date to renew the same in constitutional form then the customs and commercial union was to continue automatically "sine die." This arrangement was known as the "Ischl Clause." Monsieur de Szell, who succeeded Baron Banffy as Hungarian Prime Minister, however, contended that the "Ischl Clause" was a breach of the Constitutional Law of Hungary, inasmuch as it relinquished the right of independent action in economic matters, and, therefore, that if the commercial compact between the two countries did not receive Parliamentary ratification in Austria before 1903, then Hungary would be justified in assuming economic freedom. This was the key-note of Hungary's attitude in the negotiations which took place last year. Further demands were that the Charter of the Austro-Hungarian Bank should be continued until 1910, or for a period of seven years beyond the date of possible economic separation, and that a re-organisation of the bank should take place for the purpose of carrying through the currency reform. Briefly stated, Austria's principal objection to these stipulations on the part of Hungary was, that the maintenance of a common bank of issue after the suppression of the customs union would entail serious economic consequences for Austria. Such a suppression would have for its immediate consequence a greater demand for capital to develop Hungarian industry. This would mean a high bank-rate and a general tightening of credit from which Austria would have to suffer as well as Hungary; in addition to which, Austria would have to compete with industries developed largely by the employment of Austrian capital.

Terms of the compromise eventually effected.

After protracted negotiations the following compromise was eventually made:—

The Customs Union between Austria and Hungary is prolonged until the end of 1907. The privilege to the Austro-

Hungarian Bank is renewed until 1910; should, however, the Customs Union cease in 1907, then the Bank Charter will expire on the same day. The two Governments will by 1901, at the latest, commence negotiations for the conclusion of a definite customs alliance, which must be passed in constitutional form by the Parliaments of both countries. To this end each Government will at once commence the elaboration of a customs tariff which will form the common basis for the negotiations respecting the renewal of the Commercial Treaties with Foreign Powers in 1903. If, however, the Customs and Commercial Union is not constitutionally ratified in Austria by 1903, then the Hungarian Government will not consent to the conclusion of commercial treaties in common beyond the year 1907. But if the Customs and Commercial Union is duly ratified by 1903 then the compact can be made to run from 1903 to a date beyond 1907, in which case the commercial treaties could be concluded for a correspondingly longer period.

Difficulties in the way of reciprocity in fixing the new customs tariff.

Before, therefore, negotiations with foreign countries respecting the renewal of the commercial treaties can be entered into, Austro-Hungary has to elaborate a new autonomous customs tariff on the basis of reciprocity. But as the economic conditions of the two halves of the Dual Monarchy are in many ways different, considerable difficulty is likely to be experienced before a settlement of the common tariff satisfactory to both contracting parties can be effected.

It is generally understood that the strong agrarian interests of Hungary will demand an enormous increase in the duties on all imported agricultural produce. According to present suggestions this duty will amount to four and even five times as much as that prescribed by the present tariff. It is improbable that any exception to Hungary's policy in this particular will be taken by the agrarian party in Austria, as the increased duties proposed would mean improved prices for corn and other cereals. Austrian industrial interests on the other hand, interests which are as paramount as the agrarian interests of Hungary, would suffer greatly from a policy of high protection against foreign agricultural produce. Not only would such a policy be likely to bring about a rise in wages owing to the increase in the price of bread, and in general cost of living, but compensation for the high agrarian tariff would have to be offered to foreign countries, and this could only be effected by reducing the duties on the importation of foreign industrial products. This concession would not suit Austria, whereas on the other hand Hungarian industry being in such an infant condition, the country is still almost entirely dependent on other markets for the supply of its wants in manufactured articles, and for the present at all events, it would have very little to lose and much to gain by a reduction in the customs duties on industrial produce.

PART II.—*Translation and Explanation of the Present Law granting State Favours to certain Industries founded in Hungary.*

From January 1, 1900, until December, 1909, State favours will be granted to industrial enterprise in Hungary according to the provisions of Law XLIX of the year 1899. Applications respecting the grant of the favours enumerated in this law should be addressed to the Minister of Commerce at Budapest, from whom any further information on this subject can be readily obtained.

The following is a complete translation of the law in question :—

Text of the Law.

Sec. I.—The undermentioned factories and industrial establishments are entitled to the State favours and privileges enumerated in the present law :—

1. Factories, constructed and fitted up in compliance with modern technical requirements, which, within the Kingdom of Hungary, are engaged in the production of such articles as had not been manufactured in the country before the present law came into force.

2. The following factories which may be erected in the future, provided they are constructed and fitted up in compliance with modern technical requirements :—

(*a*) Factories wherein are produced porcelain, crockery, fire-bricks, table-glass, bottle-glass, and mirrors; further industrial establishments fitted with modern machinery for the working of marble.

(*b*) Metal plate-rolling factories (sheet-iron excepted), and those factories which produce metal piping (cast-iron piping excepted), metal wires, wire nails, zinc goods, needles, tools, door and window mountings, weapons, and industrial machinery; factories producing lamps, metal "articles de luxe," screws, and malleable cast-iron goods.

(*c*) Factories which turn out instruments, teaching apparatus, watches, clocks, playthings, pianos, and harmoniums.

(*d*) Factories which produce paper, paperstuff, wallpaper, and cellulose.

(*e*) Factories engaged in the preparation of chemical products (breweries, beet-sugar factories, and industrial distilleries excepted), indiarubber goods, and candles.

(*f*) Silk factories and establishments engaged in the fulling, weaving, spinning, and dyeing of silk; establishments engaged in the bleaching, spinning, or weaving of wool; spinning and weaving of cotton; dressing, spinning, and weaving of flax; dressing, yarning, and weaving of hemp; bleaching and dyeing of yarns and stuffs; dressing of stuffs (coloured prints excepted); and factories producing knitted and worked goods, lace goods, embroideries, felt, fringes, and string goods.

(*g*) Mining undertakings which extract metal by processes of washing, amalgamation, or electricity; factories producing briquettes (provided native material is employed in their manufacture).

(*h*) Factories of artificial manures, malt, dextrine, glucose, vegetable-oils, chicory, coffee-substitutes, and preserves; establishments engaged in the manufacture of dairy produce, and rice-dressing mills which employ home-grown rice; industries which prepare exclusively for export salted, dried and smoked meat and sausages.

(*i*) Factories which produce cognac from wine by means of distillation, provided such factories submit to the regulations for their control which may from time to time be formulated.

(*j*) Factories of mineral oils; undertakings for the production of potash salts.

(*k*) Those branches of electricity producing establishments which furnish motive-power for industrial undertakings.

3. Associations of industrials or agriculturists who are engaged in the production of the articles enumerated in Sec. I, para. 2, *a–k*, of this law.

4. All undertakings founded for the systematic employment of large numbers of industrial labourers.

5. The shipbuilding establishments, wharves, and slips mentioned in Para. 13 of the Law XXII of the year 1893, as well as modernly equipped ship repairing yards, floating and dry docks.

Sec. II.—The hereinafter-mentioned State favours and privileges will be granted to the various factories and industrial undertakings enumerated under Sec. I of this Law in addition to the freedom from house-taxation already conceded by Para. 1 of the Law LI of the year 1870:—

(*a*) Exemption from the trade tax and mining tax; from the tax imposed on undertakings which are by law obliged to publish their accounts; exemption from all local rates and Chamber of Commerce fees; and finally exemption from the general additional income tax.

(*b*) Exemption from the fees and local rates levied in connection with the purchase and transfer of factory plots or buildings, and in the case of limited liability companies, exemption from the stamp duties and fees payable on agreements and other documents relating to the founding of a limited liability company or to the increase of capital of a company already existing.

(*c*) The Minister of Finance is empowered to supply the factories and industrial undertakings mentioned under Sec. I of this Law with such quantities of unrefined salt as they may require for manufacturing purposes at a lower price than that stipulated by Para. 13 of the Law L of 1875; also the caution money to be deposited in connection with the salt supply may be fixed at a smaller sum than that laid down in the above-mentioned paragraph.

(*d*) The privilege granted by Para. 159 of the Law I of the year 1890 applies also to the industrial undertakings favoured by virtue of the present statute.

N.B.—Para. 13 of the Law L of 1875 fixes the price of unrefined rock-salt in the Marmaroser Comitat and in Transylvania at 38 kr., Austrian currency, per 100 kilos.; of household salt in Sovar, at 1 fl. 16 kr. per 100 kilos.; of sea-salt in Fiume, at 1 fl. 45 kr. per 100 kilos.

The caution money is fixed at 20 per cent. of the monopoly sale price stipulated by the Royal Salt Office.

Para. 159 of the Law I of 1890 stipulates that favoured factories are exempted from the payment of municipal road and highway rates for the period during which they are favoured.

Sec. III.—The favours conceded by the present Law are granted for any period not exceeding 15 years from the date of their concession.

In the case of newly-founded factories, application for the grant of State favours must be made within three years of the time of commencing operations. If application is not made within this limit the privileges heretofore enumerated cannot be granted.

The Minister of Commerce, in conjunction with the Minister of Finance, is empowered to decide as to the granting of the various privileges enumerated, and further as to the date on which such privileges shall commence and cease, and in all cases where agriculture, forestry, or agricultural distilleries are concerned, the Minister of Agriculture will act in conjunction with the Minister of Commerce and Finance.

The State favours granted to factories by virtue of the Law XIII of 1890 remain intact.

The favours enjoyed by such factories—provided they are entitled to the same privileges by virtue of the present law—can, in the interests of the maintenance or further development of an industry, be prolonged, but in such cases the total duration of the privileges and exemptions must not exceed 15 years.

The Minister of Commerce is empowered, in conjunction with the Minister of Finance, in cases where important economic interests warrant it, to concede the State favours cited in the present Law to the factories and industrial establishments which are mentioned in Para. 2 of Sec. I of this Statute, even though the same may have existed in Hungary before the present Law came into force.

Sec. IV.—The Minister of Commerce is empowered to grant rates not exceeding actual cost on all the Royal Hungarian State railways, and all such railways as are guaranteed by the State, for the carriage of the building materials, machinery, and parts of machinery required for the erection, enlargement, equipment, and organisation of the factories mentioned under Sec. I of this Law.

Sec. V.—In the case of those factories or industrial establishments in which all the branches of the same are not entitled to the State favours specified in the present Law, the Minister of

Commerce, in conjunction with the Minister of Finance, is empowered to extend these favours, at the application of the owners concerned, to all branches of the factories or industrial establishments. The proportion of those branches of the industry concerned which are entitled to State favours by the present Law to those branches which are not so entitled, will be taken into consideration in determining whether or no such a concession can be made, as also in fixing the duration of such concession.

Privileges conceded under this section cannot be prolonged beyond the period for which they are originally fixed.

Sec. VI.—The Minister of Commerce, in conjunction with the Minister of Finance, when fixing the period for which State favours are granted will take into consideration the locality, the extent of the undertaking, and the number and quality of the "staff," and in cases where the interests of established industries demand such a course the grant of State favours to the factories and industrial establishments enumerated in Sec. I, para. 2, *a–k*, may be discontinued.

Sec. VII.—The factories and industrial establishments to which, by virtue of the present Statute, State favours are granted are to number among those undertakings in whose favour, in accordance with the Law XLI of 1881, either a definite or temporary expropriation may take place, with this limitation, however, that only such immoveable properties of the State, municipal or local authorities may be expropriated as serve agricultural purposes or are fallow, and are not used for scientific or other public purposes.

Sec. VIII.—Decisions as regards the granting of State favours are to be published in the Official Gazette, and the municipal authorities and Chambers of Commerce concerned are to be duly advised of such concessions.

Sec. IX.—Towns and municipalities are also empowered to exempt from local rates and taxes such factories and industrial establishments as are not comprised in the present Law. But the sanction of the Ministers of Commerce, Finance, and the Interior must be obtained before such exemption can be granted, and in Croatia–Slavonia the sanction of the Banus, which in this instance must be in conjunction with that of the Minister of Commerce.

Sec. X.—The Law XIII of 1890 loses its force as soon as the present Statute comes into operation.

Sec. XI.—In carrying out this Law as regards Croatia and Slavonia, the Minister of Commerce will act in conjunction with the Banus of Croatia, Slavonia, and Dalmatia; the carrying out of Sec. VII as regards Croatia and Slavonia is, however, entrusted solely to the Banus of Croatia, Slavonia, and Dalmatia.

Sec. XII.—The present Law comes into operation on January 1, 1900, and remains in force until December 31, 1909. The Ministers of Commerce, Finance, Agriculture, and the Interior are entrusted with the carrying out of this Act.

The practical effect of the Law.

In order to make clear the practical effect of the favours granted by this Law, the following particulars may be of interest:—

Factories and industrial establishments in Hungary to which State favours are conceded, by virtue of the Law XLIX of 1899, are entitled to the under-mentioned privileges and exemptions:—

1. Exemption from the State trade and mining tax.

In the case of Joint Stock Companies limited by shares this State tax is assessed at 10 per cent. of the yearly net profits.

2. Exemption from the local rates imposed on the above State tax.

These local rates are assessed at 25 per cent. at Budapest, and vary between 0 per cent. to 100 per cent. in other parts of Hungary.

3. Exemption from the Chamber of Commerce fees.

These fees are assessed upon the above-mentioned State tax at the rate of 1½ per cent. at Budapest, and at from 1½ per cent. to 5 per cent. in other parts of Hungary.

4. Exemption from the general additional income tax.

This tax is levied upon the above-mentioned State tax at the rate of 30 per cent.; upon the house-rent tax at the rate of 30 per cent.; upon the house-class tax at the rate of 40 per cent.; and upon the land tax at the rate of 30 per cent.

N.B.—There are two different kinds of house-tax in Hungary:—

(1) House-rent tax. This tax is assessed on the net house rent at the rate of 22 per cent. at Budapest, at 20 per cent. in the O'Buda parts of Budapest, and at from 16 per cent. to 20 per cent. in other parts of Hungary, according to the proportion of the number of the house properties actually rented to the total number existing.

In places where at least one-half of the total number of house properties are actually rented, the unrented house properties are are also subject to house-rent tax, and the tax in such cases is assessed on the net rent revenue yielded by similar house properties which are actually rented.

(2) House-class tax. This tax is levied on house properties which are not rented and which are situated in towns and parishes where the number of rented house properties is less than one-half of the total number of house properties there existing. The tax varies between 80 kr. and 54 fl. per house, according to the importance of the place and the proportion of the numbers of rented house properties to the total number existing.

A local rate is levied on both kinds of house tax at the rate of 25 per cent. at Budapest, and in other places at a rate varying from 0 per cent. to 100 per cent.

It should be noted, however, that houses granted free of rent to work people by the employers of factory labour, as well as those parts of the factory buildings which are not used for dwelling purposes, but merely for carrying on the business of the factory, are exempt from both kinds of house-tax and from the

local rates imposed thereon, provided the workmen's dwelling houses and the factory buildings are the property of the manufacturer.

This exemption, however, does not form part of the State favours granted by Law XLIX of 1899, but is conceded by virtue of Law LI of 1870 to all owners of factories in Hungary whether enjoying State favours or not.

5. Exemption from municipal road and highway taxes.

These rates are levied on the State taxes, general additional income tax excepted, at a rate which varies in different parts of Hungary, but which as a rule does not exceed 10 per cent. The rate at Budapest is at present 1½ per cent. on the State taxes.

6. Exemption from the fiscal and local dues payable upon the purchase and transfer of factory plots and buildings.

The fiscal due is $4\frac{3}{10}$ per cent. on the purchase money.

The local due is 1 per cent. on the purchase money at Budapest. In other parts of Hungary this local due is not as a rule levied.

7. Exemption from the stamp duties and fees payable on agreements and other documents connected with the issue of shares at the time of the formation of joint stock companies, or at the time of an increase of the share capital of companies already existing.

The stamp duty payable on the issue of shares is assessed on the nominal value of each share according to the following scale:—

(1) In the case of shares issued in the name of shareholders the duty is:—

On Amounts—		Duty.	
From—	To—		
Florins.	Florins.	Fl.	kr.
..	20	0	07
20	40	0	13
40	60	0	19
60	100	0	32
100	200	0	63
200	300	0	94
300	400	1	25
400	800	2	50
800	1,200	3	75
1,200	1,600	5	00
1,600	2,000	6	25
2,000	2,400	7	50
2,400	3,200	10	00
3,200	4,000	12	50
4,000	4,800	15	00
4,800	5,600	17	50
5,600	6,400	20	00
6,400	7,200	22	50
7,200	8,000	25	00

and on amounts exceeding 8,000 fl. 1 fl. 25 kr. on every additional 400 fl.

(2) In the case of shares issued to bearer the duty is:—

On Amounts—		Duty.
From—	To—	
Florins.	Florins.	Fl. kr.
..	10	0 07
10	20	0 13
20	30	0 19
30	50	0 32
50	100	0 63
100	150	0 94
150	200	1 25
200	400	2 50
400	600	3 75
600	800	5 00
800	1,000	6 25

and on amounts exceeding 1,000 fl. 1 fl. 25 kr. on every additional 200 fl.

Part III.—*Record of Hungary's Industrial Activity during the Year* 1899.

It may be interesting, in conclusion, to glance at the record of industrial development in Hungary during the year 1899 and at the same time to note the material assistance afforded by the Government to industrial enterprise during this period.

New factories started in Hungary during 1899.

During the year 1899, 175 new factories were started in Hungary. Seventy-eight of these are engaged in the manufacture of food products, principally small steam flour-mills. The remainder comprise wood factories, distilleries, breweries, glass, pottery, chemical, iron and textile factories.

Factories started with Government assistance.

Of the new factories started in 1899, 24 have been erected with the assistance and co-operation of the Hungarian Ministry of Commerce, special encouragement having been given to the textile, chemical and iron industries. These 24 factories possess a share capital of 29,000,000 crowns, and employ up to date 7,900 workmen. The factories in question may be classified as follows:—

Eight textile factories employing 3,540 workmen and 1,980 new mechanical looms. The two principal of these factories possess capitals of 8,600,000 and 1,130,000 crowns respectively. Six chemical factories, five iron and metal factories, one fine leather factory, one celluloid and paper factory, one ceramic products factory, one harness factory, and one mining establishment.

State subventions to factories in Hungary.

During the year 1899 a sum of 395,400 crowns was expended in State subventions to factories. Of this amount, however, 206,600 crowns was expended by reason of subventions granted previous to 1899.

Factories in the enjoyment of State favours granted by Law XIII of 1890.

By virtue of Law XIII of the year 1890—a Statute which has now been replaced by Law XLIX of the year 1899—State favours were granted last year to the following factories, numbering 82 in all:—16 textile factories, 13 chemical factories, 12 food factories, 11 iron and metal factories, seven pottery factories, six machinery factories, four wood factories, three glass factories, two paper factories, one tools factory, one wearing apparel factory, one leather factory, one electrical plant factory, and four mining establishments.

It should be observed that the majority of these factories were in enjoyment of State favours prior to 1899.

Enlargement of existing factories.

During the year 1899 a sum of 4,298,000 crowns was invested in the enlargement of certain existing factories, principally textile, chemical and iron.

Factories likely to be erected in the near future with Government assistance.

At the present time the Hungarian Ministry of Commerce is engaged in negotiations concerning the erection of 28 large factories, comprising:—14 textile factories (which if carried into effect would represent a capital of 18,400,000 crowns, and employ 1,200 to 1,500 mechanical looms and 5,000 workmen); six chemical factories (one wood-pulp factory, two indiarubber factories, one aluminium factory, one carbide factory, and one lighting material factory) which if carried into effect would represent a capital of 5,000,000 to 6,000,000 crowns, and employ some 2,000 workmen; further two iron and metal factories, two preserved food factories, two coal briquette factories, one malt (export) factory, and one shoe factory. These latter if erected would represent a capital of some 4,000,000 crowns and would employ about 3,000 workmen.

The negotiations in reference to the erection of the above cited factories, although well advanced, are not yet concluded.

State aid to small industries.

In addition to the State encouragement and assistance afforded to factories and other large industrial establishments in Hungary, it is likewise the policy of the Government to aid and encourage the development of small industrial undertaking which for the most part are carried on in workshops (Kleingewerbe). During the year 1899 State assistance has been afforded to the workshop industries of Hungary as follows:—

(1) Machines to the value of 28,096 crowns were delivered gratis. Of these machines two were employed in the wood business, nine in iron and metal manufacture, four in textile manufacture, one in fancy leather manufacture, and three in sundry manufactures.

(2) A sum of 43,600 crowns was expended in the education of apprentices.

(3) A sum of 10,600 crowns was expended in the purchase of raw material.

(4) Practical lectures were organised for shoe-makers, tailors, and potters at a total expense of 12,200 crowns.

(5) Exhibitions were arranged for the display of new tools and machines suitable for small industries at a cost of 22,400 crowns.

(6) Twenty associations of small industrials were formed with

a total membership of 1,899 members. The subscribed capital amounted to 223,164 crowns in 4,881 shares This brings the total number of small industrial associations in Hungary up to 31 with a membership of 2,857, a share total of 7,378 and a capital of 557,673 crowns. State subvention was granted in 1899 to as many as 20 of these associations, amounting in all to 126,400 crowns.

Labour agencies.

The first agency in Hungary for procuring work for industrial labourers was opened in Budapest on March 1, 1900. The agency is supported by the Budapest Chamber of Commerce and Industry, and if successful similar agencies will be established in different parts of Hungary.

Workmen's accident insurance.

A system of workmen's accident insurance is now occupying the attention of the Hungarian Government, and statistics on the subject of accidents are being studied and worked up with a view to subsequent legislation.

Preparation of industrial statistics.

Operations for the collection of the statistics of national industrial production have just been completed. Forty-nine Government officials have been engaged in collecting statistical data relating to some 3,000 factories. The data thus collected are now being worked up and will be published in the course of the present year.

Statistics relative to industries on a small scale (Kleingewerbe) will be collected in conjunction with the census and will be published separately.

Commercial education.

During the year 1899, 1,250,000 crowns were expended by the Hungarian Government for the erection of commercial schools in various parts of Hungary.

Re-organisation of the Museum of Commerce.

An interesting feature in connection with Hungary's industrial aspirations is the recent re-organisation of the commercial museum which has been converted into a State institution, the precise aim of which is the promotion of Hungarian trade both import and export. An intelligence department has been created for the purpose of enabling merchants and manufacturers to obtain speedy and reliable information concerning the credit of foreign firms, foreign import duties, freights, usages in foreign markets and what demand there may be for particular articles which Hungary might be in a position to supply. Samples of such articles will be collected and will be labelled with all necessary particulars such as prices, import duties, freights, &c. It is further intended to send agents abroad to study the requirements of foreign markets and to report thereon. Special exhibitions of articles of home as well as foreign manufacture will be held from time to time to enable foreigners to study Hungarian products, and at the same time to give the Hungarian manufacturer an opportunity of seeing what is produced in other countries.

Tri-weekly publication of extracts from Consular reports, &c.

During the past year the Ministry of Commerce has made arrangements for the publication three times a week of a leaflet containing extracts from Consular reports, notices of openings for tenders both at home and abroad, and further any alterations in customs tariffs or regulations. This publication is delivered gratis to parties interested. The number of copies delivered during 1899 amounted to some 3,000.

The preceding statement as to industrial activity in Hungary during the year 1899, shows that the Government by no means limits its good offices to the prescription of any law. On the contrary it would appear that there is a desire on the part of the administration to encourage by substantial support, and by way of private negotiation, any *bonâ fide* enterprise calculated to promote the industrial development of the country. It remains for capitalists to judge whether the assistance of the State is adequate to enable them to overcome initial difficulties proceeding from the somewhat unusual nature of Hungary's economic situation.

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DIPLOMATIC AND CONSULAR REPORTS.

BELGIUM.

REPORT ON THE

FLAX INDUSTRY OF COURTRAI.

Presented to both Houses of Parliament by Command of Her Majesty,
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1900

[Od. 2—2.] *Price One Halfpenny.*

Report on the Flax Industry of Courtrai

By Mr. CONSUL-GENERAL DE COURCY-PERRY.

(Received at Foreign Office, December 11, 1899.)

The town of Courtrai ranks second among the commercial and industrial centres of the province of Flanders, and at the commencement of 1898 had a population of 33,128. The exceptionally favoured situation which Courtrai occupies on the banks of the River Lys, in the midst of the flax retting district, is certainly the main cause of the town's prosperity, but, in addition to the flax trade, other important industries exist in Courtrai and its neighbourhood, and give the whole district a character of brisk and flourishing business activity.

The following figures respecting the operations of the agencies of the "Banque Nationale" at Courtrai and Roulers during the year 1896 may prove of interest as giving some idea of the amount of business conducted in the district:—

TABLE showing Operations of the Agencies of the "Banque Nationale" at Courtrai and Roulers during the Year 1896.

Agencies.	Private Accounts.								Bills presented for Cashing.		
	Receipts.		Payments.		Bills on the Bank.						
					Issued.		Paid.				
	Number of Accounts.	Amount.	Number of Accounts.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Unpaid Bills.
		Francs.		Francs.		Francs.		Francs.		Francs.	
Courtrai	827	30,364,000	683	30,343,000	6,818	11,289,000	7,807	44,776,000	33,358	23,041,000	534
Roulers	158	7,011,000	421	7,025,000	4,826	8,096,000	3,836	18,470,000	19,302	14,147,000	329
Total	985	37,375,000	1,104	37,368,000	11,644	19,385,000	11,643	63,246,000	52,660	37,188,000	863

TABLE showing Number of Vessels Entered and Cleared the Port of Courtrai-sur-Lys during the Year 1897, together with Statistics of Principal Articles of Merchandise Exported and Imported by Marine Transport.

	Total Movement.	Explosives.	Metallurgical Products.	Building Material.	China and Glass.	Wood.	Agricultural Products.	Industrial Products.	Other Goods.	Number of Vessels.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
Entered	83,168	37,734	1,824	7,450	9,617	2,913	17,968	1,121	4,541	636
Cleared	13,451	1,681	..	1,211	1,936	816	5,413	266	2,128	238

NOTE.—The above figures do not include empty vessels.

The flax industry.

As already mentioned, the flax trade is the principal source of the prosperity of Courtrai. It is, therefore, only right that, in the present slight review of the resources of the district, the first place should be given to this interesting industry. The success which attends the manufacture of flax at Courtrai may be attributed, in a great measure, to certain properties possessed by the waters of the River Lys which impart to the flax a remarkable fineness, or spinning quality, combined with extreme tenacity. The peculiar virtues with which nature has endowed this stream would appear to have baffled scientific research. Continuous efforts have been, and are being made by scientists, especially in Russia, to ascertain the nature of the chemical components to which the Lys owes its rare qualities, but their endeavours have so far proved unavailing. This sluggish and apparently insignificant river thus possesses what may be called a unique monopoly, and, on account of the great benefits it confers upon the district through which it flows, has been well-styled "the Golden River." It is a curious fact worthy of some notice, that the special properties of the Lys do not extend throughout its entire course, but are confined to that portion of the stream which flows between Comines (Pont Rouge) and Deyuze (Barrière d'Astène). From Comines to Menin the Lys flows midway between the north of France and West Flanders, but it is between Menin and Vive St. Eloy that the retting is principally carried on, and at Wevelghen, half-way between Menin and Courtrai, the industry reaches its culminating point.

The demand for flax prepared in the Lys has greatly increased during the past 10 years, and the amount of fibre brought for treatment in that river becomes annually larger. The local crop no longer suffices to meet present requirements, and immense quantities of flax arrive from foreign countries, especially Holland and France. The north of France, the Pas de Calais and the Riverine districts of La Somme supply the greater quantity of French raw flax introduced into Courtrai. Other departments contribute to a certain extent, but not in quantities comparable with those sent by the districts mentioned. Of late years small consignments of flax have also reached Courtrai from the Argentine Republic.

The quantity of flax straw retted in the River Lys last year was calculated at about 90,000 tons. Some 12,000 to 15,000 labourers being employed during the six months from April 15 to October 15—that is to say, the season during which retting takes place.

After the retting processes are finished the flax is stored in barns and sheds until winter, when the scutching, that is cleaning the fibre of the woody parts, takes place. This was formerly all done by hand, but at present steam power is greatly used and much is also done by a sort of treadmill.

About 10,000 tons of scutched flax were sent last year to Great Britain and Ireland, the greater part going to the latter country. Other countries, such as Germany, Austria, Russia, France, and America receiving the remaining portion of the flax exported. The Belgian spinning mills also take a small quantity.

It is much more difficult to compute the quantity sent to other countries than to the United Kingdom, owing to the different ways and means by which it is carried. For instance, a considerable quantity is carted by huge wagon-loads direct to the spinning mills to the north of France.

The flax trade in Courtrai is almost exclusively in the hands of English or Irish firms and the few firms of other nationalities have Englishmen in their employ to select and class the flax. Outside of the 20 commission houses that are engaged in the flax trade, about 10 of the principal Irish spinners have their own buyers resident in Courtrai, and others send their buyers over as circumstances of trade demand it, so that practically the business is in British hands.

During the 1896–97 season, which may be taken as an average year, the value of the flax exported from the Courtrai district was 30,000,000 fr. The shipments for Great Britain and Ireland take place through the port of Ghent by the direct Ghent–Belfast route and other regular lines.

Flax spinning.

It is a curious and remarkable fact that, although Courtrai, as we have seen, excels pre-eminently in the retting and dressing of the flax fibre, spinning is carried on there only to a very limited extent. In point of fact, there are only six spinning houses in the district, two at Courtrai and four at Roulers, and none of these establishments make use of the high-class Courtrai fibres, but, strange to say, employ almost exclusively the lower grade Russian flax.

Weaving.

Weaving has been carried on since an early date at Courtrai, and in former times the name of the town was identified with some of the finest woven fabrics in the world. This industry is still actively carried on, and, after the flax trade, may be regarded as the principal branch of Courtrai's industrial activity. The old method of hand-weaving still flourishes, but a large quantity of fabric is also produced by the mechanical process.

Hand-weaving is done exclusively by workmen in their own houses. The yarn being prepared at the factory and distributed to the weavers, who take it home and return it in the form of woven tissue. The finer grades of linen, baptiste and other high-class fabrics are made solely by hand, but all classes of work, including those generally carried out by mechanical means, can also be executed on the hand-looms.

Machine-weaving was founded many years ago in the Courtrai district, but its extension and development were somewhat slow. Manufacturers exhibited at first a good deal of hesitancy before embarking in the new enterprise and laying out their capital in an industry whose success appeared somewhat problematical. For upwards of 15 years the Courtrai weaving industry remained practically stationary and offered but little opposition to foreign competition. Finally, some 10 years ago a considerable number of the manufacturers interested in hand-weaving realised that in certain branches of the industry the struggle against mechanical process was hopeless; consequently, they wisely yielded to the

stress of circumstances and founded large and well-equipped machine-weaving establishments, which have steadily prospered up to the present time; the increased production and improved general results in every way justifying the change. The number of machine-weaving factories in the Courtrai district now amounts to about 20; the number making use of the old hand-loom system is, however, much larger.

Twenty years ago the Courtrai weavers produced little else save the higher grades of tissues, woven with the best qualities of flax thread; now, however, the output consists of all classes of goods, made of every kind of textile material, and Ireland and Bohemia have, to a great extent, wrested from Courtrai the supremacy which she once held in the manufacture of fine woven fabrics. This falling-off in the quantity of the tissues produced at Courtrai may probably be attributed to the fact that there is now less demand for the better sorts of linen. Formerly no fairly well-to-do family was without its store of fine linen, which was prized as a kind of outward and visible sign of prosperity. In the present day, however, this tradition would appear to be extinct and the middle classes content themselves with mixed cotton and flax stuffs, or even pure cotton goods. The weaving industry has necessarily adapted itself to this new state of things, and the Courtrai weavers, without exception, now produce the cotton and mixed goods for which there is so much demand.

British colony at Courtrai.

There are at present some 70 to 75 British residents in Courtrai, all of whom, with a single exception, are engaged in the flax trade. Besides these permanent residents, there are about a dozen persons of British nationality who visit the district each year, and reside there temporarily during the flax-buying season.

The members of the British community at Courtrai belong, with two exceptions, to the Anglican religion and attend the Courtrai–Roulers Protestant Church, which has been organised to meet the spiritual needs of English residents in the district.

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DIPLOMATIC AND CONSULAR REPORTS.

BELGIUM.

REPORT ON THE

PRESENT STATE OF THE BELGIAN COAL, METAL, AND GLASS INDUSTRIES.

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Report on the Present State of the Belgian Coal, Metal, and Glass Industries by Sir Gerald de Courcy-Perry, H.M.'s Consul-General at Antwerp.

(Received at Foreign Office, June 22, 1900.)

Belgian coal.

The present position of the Belgian coal market is exceptionally brilliant, and the prospects for the immediate future give every promise of continued prosperity. Large industrial buyers, who have not made arrangements for their supply for the coming year, now bitterly regret not having done so, since fresh and important rises in price are exceedingly probable. It is hoped, however, by those interested in the trade, that mine owners will realise that a policy of moderation is best calculated to serve their own interests.

The State railways and private individuals can, without great inconvenience, pay high and even extravagant prices, but this is not the case with industrial buyers, who are unable to incur largely increased working expenses, owing to the fact that at least three-quarters of their manufactures are exported, and on foreign markets have to cope with the competition of products from the United Kingdom and Germany, in both of which countries fuel is obtainable at present at lower prices than in Belgium.

Building operations are being carried on to a very large extent in Belgium this year. The demand for coal for brick works and lime kilns has also been very active and high prices have been the rule. The amount of coal required by the above industries at the present time is greater than during 1898 or 1899 which, nevertheless, were considered exceptionally favourable years.

There is practically no stock of high grade coals for domestic use, and some coal mine owners are even much behindhand in carrying out existing orders. Others accept no fresh orders, however advantageous. Those owners who still accept orders stipulate for increased prices for deliveries made from the present time up to the end of next winter. It is evident, therefore, that the rise in prices has not yet reached its limit.

The prices at present range from 28 fr. for the best qualities of pit-mouth coal to 40 fr. for high grade screen coal, prices quoted being for immediate delivery.

Transport by railway in Belgium has not yet such regularity as might be desired and considerable apprehension is entertained with regard to the likelihood of strikes taking place on the canals

and inland waterways. Some dissatisfaction is manifested in industrial circles that strikes of this nature are not suppressed with more vigour by the authorities. However this may be, there is, at the present moment, no ground for complaint with respect to the facilities for transport by water, especially towards France, and notably Paris, where the demand for coal is remarkably brisk, the winter stocks being now consumed, and the merchants are particularly desirous of getting in good supplies in view of the stimulus which the Exhibition may be expected to give all branches of trade.

In short, from every point of view, the Belgian coal market may be regarded as being in a most fortunate position at the present time.

Metal market. The metal market cannot be described in such glowing terms as the coal market. With respect to sales in Belgium, however, its situation leaves nothing to be desired. All the worshops, boiler-making establishments, and large buyers generally, have provided themselves liberally and without beating down prices. The factories devoted to working steel and iron have been fully occupied and fresh home orders are constantly pouring in as fast as they can be accepted. Orders for various classes of machinery and electrical plant may be instanced as being particularly numerous. There is also a brisk demand for bridge-work of all kinds, and for railway material. Indeed, as regards this latter article, it is probable that the establishments which make a speciality of carrying out contracts for railway rolling stock will find their resources taxed to the utmost to execute the orders which the State railway are shortly going to submit for tenders. These orders will be for locomotives, railway carriages, trucks, &c.

The situation of the home market is thus most satisfactory, but with regard to the export trade, not only have prices declined 10 fr. per ton, but foreign applications for tenders have been far from numerous. This state of things has had such an unfortunate effect upon the establishments which manufacture principally for the export trade, that many of them have been obliged to pass one or two days per week in absolute idleness. It is the larger establishments which have been most severely affected, as the small factories work generally for the home market. It is believed, however, that this unsatisfactory condition of the Belgian export market for metal products will shortly be much improved. As a general rule, Belgian metal interests are largely dependent on the British market, the principal exportation from this country being effected through important London firms. Now the United Kingdom has never exported more iron and steel than at the present moment, and the market is improving week by week, and month by month, so it may be anticipated that a corresponding increase of activity may, before long, be observed in the Belgian export trade. It is interesting to note that the market for metal manufactured goods in Germany is so good that ironmasters in that country are devoting the greater part of their attention to supplying the home trade and thus

leaving foreign markets free from their competition. France does not now occupy an important position on the international metal markets. Further, her exportation of siderurgical products is diminishing, whilst the imports are increasing.

The United States are now recovering from the temporary crisis which the metal market passed through, and, as this crisis had apparently no injurious effect on the British market, it is only reasonable to suppose that the unsatisfactory condition of the export metal trade in Belgium is not due to what passed in America.

Glass market.

The exports of glass to the United Kingdom have fallen off considerably, and, as the United Kingdom is the principal market for Belgian glassware, this diminution has been severely felt by the trade. The repeated rises in price ordered by the Belgian Syndicate of Glassworkers alienated buyers to some extent, but in the greater number of cases the foreign market has now regained its tone. Numerous advantageous orders have been received from the United States, Canada, China, and Japan, but the prosperity of the trade cannot be regarded as assured as long as exports to the United Kingdom continue at their present low ebb.

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Report on the State of Amazonas

By Mr. Vice-Consul Temple.

(Received at Foreign Office, June 4, 1900.)

Geographical position.

The State of Amazonas, the greatest in area of the United States of Brazil, lies between longitudes 74° W. and 54° W., and between latitudes 4° N. and 10° S., having a total area of about 600,000 square miles. It is bounded on the north by British Guiana and Venezuela; on the west by Colombia, Peru, and Bolivia; on the south by the State of Matto Grosso; and on the east by the State of Pará.

Boundaries.

Physical geography.

On the north and west frontiers there are some highlands and plateaux, but for the most part the State consists of vast, low-lying, forest-clad plains intersected by the innumerable tributaries of the River Amazon. These, rising in the Andes converge to the main stream of the Amazon named in this State, the Solimões. Flowing as they do, through flat country, their course is generally extremely sinuous, and their current sluggish. The course of the main stream, on the contrary, is comparatively straight and the current swift, that is to say, about four miles per hour. Flowing from west to east the Solimões divides the State into two, about equal parts, and forms a most important highway for commerce between Pará, situated at the mouth of the Amazon, Manáos, the capital of the State of Amazonas, and Iquitos, situated in Peru, being navigable as far as the latter part at all times of the year for vessels drawing not more than 12 feet. The distances between Manáos and other points on the Amazon and its tributaries will be found in Tables Nos. 1 and 3 (pp. 30 and 31).

River system.

Tributaries of the Solimões.

It is noticeable that the majority of the larger tributaries of the Solimões, namely, the Javary, which forms the boundary between Brazil and Peru, the Jutahy, Jurua, Purus, and Madeira, flow from south to north, whilst only one large tributary, the Negro, and two smaller, the Japura and Içá, or Putumayo, enter the main stream from the north. Although no mountains occur until the extreme north and west frontiers of the State are

reached, yet, on the whole, the part lying to the north of the Solimões is considerably higher and less swampy that that lying to the south. On the upper reaches of the Rio Branco, a tributary of the Negro, large grass-covered plains, known locally as "Campos Geraes," occur, on which a considerable number of cattle are raised. For this very reason, however, that part of the State is at present of less value, and is less explored than the southern part, where the immense tracts of swampy land produce the invaluable "Hevea Braziliensis," from which the rubber is extracted.

Rio Branco.

Rise and fall of the rivers.

Wet and dry seasons.

The enormous rise and fall of the rivers according to the season, generally causing a difference of some 40 or 50 feet between high and low water mark, affects not only their navigability but also very considerably the character of the country through which they flow. During the wet season, which begins in January and ends in June, the forest on the river banks is flooded to a distance of many miles. The orchid collector in his canoe travels amongst the tops or half way up the trees; many of the trees are submerged altogether. Quite small streams become navigable for launches and steamers, whilst the larger rivers can be navigated almost to their sources. Game is scarce; the forest is silent and echoes no sound, save for the occasional thud of a falling branch or fruit thrown down by a chance band of monkeys into the water below. In August the rivers begin to fall again; as the dry season continues water becomes so scarce in the forest that exploring parties of rubber cutters have to carry with them sufficient for their daily needs; where during high water lakes existed, large grass-covered clearings are to be found, only a small stream running through the centre remaining of the vast mass of water now drained off. Rubber-cutters' huts which for months had been under water are now high and dry and habitable again. Along the banks of many rivers sandy reaches appear, on which alligators bask and innumerable turtle lay their eggs. Game of all sorts is plentiful. The tracks of jaguar, tapir, deer, and other animals may be traced in the sand. Fish, which during the wet season had been scarce and scattered through the flooded forests are now confined to the water-courses, and fall an easy prey to the arrow, hook, or harpoon of the natives.

Climate.

The vast area thus uncovered to the sun's rays during the gradual fall of the rivers, and the consequent decomposition of vegetable matter that takes place, are the signal for malaria and beri-beri to break out to a large extent amongst the rubber-cutters, most of whom are entirely unsupplied with even the commonest preventives. It has often been noted by experienced observers that malaria is commoner on the smaller rivers, especially at their headwaters, than on the banks of the larger streams.

Temperature.

Although the mean temperature is high, being 79·5° F., yet the maximum, 102° F., cannot be considered excessive when the latitude is taken into consideration. Table No. 19 (p. 41) will be found to give details with regard to this point. Owing to the enormous evaporation that is constantly taking place, due to the plentiful

rainfall and to the very prevalent winds that blow up from the east, it cannot be said that even European residents suffer greatly from the actual heat. The dampness of the atmosphere, due to the evaporation, combined with the evenness of the temperature throughout the year, have, however, a very enervating effect on most foreigners resident in the State.

Population.

The vast area of the State has already been noticed; the whole of this area does not, however, contain more than 350,000 to 400,000 inhabitants, in spite of the fact that there is a constant stream of immigrants from the southern portions of the Republic, attracted usually by very exaggerated reports as to the vast fortunes that have been amassed here in a short time. During the last 10 to 15 years the immigration from the State of Ceará only has exceeded some 8,000 souls annually; whilst during the last two years at least 15,000 emigrants per annum have entered the State.

Social conditions.

The social conditions at present existing are in some ways remarkable and interesting. There is a scanty population scattered over an immense tract of land. Of these, some 340,000 are rural, and the remaining 60,000 urban population. Of the latter class some 40,000 form the population of the capital, Manáos, and the remainder represent the total population of the various small towns, or rather villages, scattered through the State.

Isolation of the country folk.

The rural population through want of means of communication is subdivided and isolated to such an extent that each family with its labourers and servants forms practically a unit. The lack of even roads, all traffic being in canoes, prevents any exchange of civilities taking place except on the rarest occasions. The absence of trade centres up country; the rarity and smallness of such towns as do exist; the fact that no barter or exchange, except on a small scale, takes place anywhere except at the capital, prevents that intercourse between country folk which usually occurs even in the newest and least advanced countries.

Centralisation in Manáos.

And yet though the population is so much divided up in some respects it is extraordinarily centralised in others. The capital, Manáos, absorbs not only the entire intellectual and political life of the State, but is also the only centre of commercial activity. The effect which this peculiar state of affairs has upon the social and political organisation of the State is very great. Amongst the population of Manáos which includes practically all the professional men, such as lawyers, doctors, engineers, and wealthy merchants, the majority of the more educated are more familiar with Europe and the capitals of other Brazilian States that lie on the seaboard than with the interior of this State. The result of this state of affairs, which exists all over Brazil to a certain extent, but which is accentuated in Amazonas, is as follows:—The rural population is extremely backward and uneducated and extraordinarily indifferent to outside affairs. At the same time yearly

visits are made to Manáos by all classes, even the poorest, during the season when it is not possible to work in the rubber forests.

List of principal townships.

There are besides the capital Manáos the following townships with their respective populations:—

Township.	Population.
Teffé..	4,000
Itacoatiara	2,000
Parintins	1,500
Bareirinha	1,500
Borba	2,000
Barcellos	1,000
St. Paulo de Olivença	2,000
Antimari	1,500
Codajas	2,000
Silves	1,000
Maués	1,000
Manicoré	1,500
Labrea	1,000
Coary	1,500
Fonte Boa	3,000

As no census has been taken for many years, it is impossible to obtain exact data as regards the population of the State, and these figures must only be considered rough approximations.

Owing to the centralisation of business operations at Manáos, which has if anything a tendency to increase, most of these towns are in a very decadent condition, and present even to the eye an appearance of desolation and decay.

Education.

Education is in an extremely backward condition, on account of the lack of means of communication and of social intercourse. Of the whole population of the State the proportion that cannot read or write is probably very large.

Government.

The Government of the State is carried on by means of a House of Representatives named the State Congress, the members of which are elected by a practically universal suffrage, the only qualification necessary for an elector being that he should be able to write his own name and be on the electoral roll.

Congress.

The Congress consists of 24 members. Measures passed by them do not become law until sanctioned by the Executive which is entrusted to the Governor, who may veto any measure should he think proper.

Functions of the State Legislature. Limitations.

The State Legislature has the control of all land laws, the taxation of the land and its products, and the expenditure of the revenues produced by this taxation. It has, however, no control of the import taxes, which are regulated by the Federal Government, nor can it materially alter the various codes, criminal, mercantile, and others, by which common law and equity are administered, these being the same for all the States of Brazil.

The seat of the Government is at Manáos, which is also the residence of the Governor and where the Congress meets once a year in June. Seat of Government

For the purposes of the administration of justice the State is divided first into "Commarcas," and these again are divided into "Termos." Civil or criminal suits come first before the "Juiz Municipal" of the "Termo," from him there is an appeal to the "Juiz de Direito" of the "Commarca," thence there is a further appeal to the "Tribunal Superior" at Manáos. Should the case be laid before the "Supremo Tribunal" at Rio de Janeiro that Court may order the case to be retried by the "Tribunal Superior." The decision then given is final. Administration of Justice.

The "Tribunal Superior," at Manáos, consists of seven "Desembargadores," or justices, nominated by the Governor. These justices, though they cannot be dismissed, can be suspended from office by the Governor. The "Juiz Municipal" and the "Juiz de Direito" are also nominated by the Governor.

The State is divided into 24 municipalities; each of these municipalities is under the superintendence of a local council of "intendentes," elected on the spot by duly qualified electors. These have the power to tax the land and its produce to a limited extent, and to employ the revenue thus obtained on local improvements. By the constitution of the Republic they should enjoy a considerable autonomy. In this State, however, they are controlled by a "superintendente," or mayor, who is nominated by the Governor, and who exercises the same control over them as is exercised by the Governor over the Congress. Municipalities.

Public security throughout the State is provided for by a force of militia, maintained at the expense of the State. This force numbers about 900 men, including officers. The headquarters of the force are at Manáos, detachments being sent to the various municipalities as required. The appointment and promotion of officers in the militia rests with the Governor. Police.

It will be seen from the foregoing remarks that a very considerable power is vested in the hands of the Governor of the State. By him are nominated all officers of justice throughout the State, he nominates the officers of the only executive force that exists, he nominates the "superintendentes," who are the most influential men in each municipality, and, finally, he has a right to veto all measures passed by Congress. In short, the machinery of Government is entirely under his control, and he can, without in any way stretching the powers conferred upon him, govern much as he pleases. As a set-off, the Congress has a right to impeach the Governor, depose, and fine him, should he misuse these powers. Position of the Governor.

The Governor of the State is elected for a period of four years, and he cannot be re-elected until four years have elapsed since his last tenure of office. A near relative of the retiring Governor, such as a brother or uncle, is not eligible to succeed him. Term of office.

There are probably few countries so naturally favoured with Inland transport.

regard to inland transport as this State. Though the swampy nature of the ground and the exuberance of the vegetation do not facilitate the building of roads or railways, their place is supplied by a network of streams and rivers which serves to connect even remote parts of the State with the capital. Many thousands of miles of navigable waterway exist, and it is probable that by a small expenditure of labour and money this could be enormously increased. Very little has hitherto been done in this direction. A mileage table, showing the distances from Manáos to various points in the interior of the State, will be found in Tables Nos. 1 and 3 (pp. 30 and 31.)

River steamers.

A large number of river steamers, owned by various firms, visit these ports. The principal firm is the Amazon Steam Navigation Company, which is owned by British capital, its directorate being situated in London, and its principal headquarters in Pará.

Manáos and Pará.

It is a frequent complaint amongst Manáos shippers that undue preference is given to Pará cargo by many of the shipowners who have their headquarters at Pará, and that a great amount of trade that should naturally come to Manáos is thus diverted to Pará. This is to a certain extent no doubt true. Many other causes, however, go to produce this result, the most important of which is, as will be shown later on, the lack of telegraphic communication, which is a very serious drawback. Also a great deal yet remains to be done by the Amazonas Government to facilitate the handling of cargo at Manáos. Many improvements are urgently required on the riverside.

Freights.

In Table No. 1 (p. 30) will be found a list of freights charged by steamers and launches to various points up-country. The State Government spends the sum of about 50,000*l.* annually in subsidising steamship lines.

Communication with the Federal capital.

Manáos is connected with the Federal capital, and other southern ports of Brazil, by the Lloyd Brazileiro line of steamers. This line is subsidised by the Federal Government, and plies from Rio de Janeiro to Manáos on the north, and from Rio de Janeiro to Cuyabá in Matto Grosso, viâ Buenos Ayres, on the south, calling at all intermediate ports on the coast An average of three steamers per month belonging to this line call at Manáos.

Coasting trade.

Under the so-called "cabotagem" (coasting trade) law vessels flying any but the Brazilian flag are not permitted to carry cargo between Brazilian ports.

Communication with foreign ports.

With regard to communication with foreign ports, Manáos may be regarded as favourably situated. Although the site of the town is nearly 1,000 miles distant from the sea, yet steamers of all tonnages have ready access at any time of the year to the port. The markets of North America and Europe are therefore within easy reach for the natural products of the State. At the present time, and during the past 30 years, two British steamship companies, the Booth and Red Cross lines, have held a practical monopoly of the carrying trade to and from this port. Their combined fleet is

large and efficient, and quite equal to the requirements of the trade. The combined fleet numbers some 29 vessels, with a total net tonnage of 41,884 tons. On an average, six steamers per month, belonging to one or other of these two companies, visit Manáos. Starting from Liverpool, they visit Hamburg, Oporto, Lisbon, Madeira, Pará, and Manáos. One steamer per month passes Manáos, and proceeds up river as far as Iquitos in Peru. Starting from Manáos, three steamers return to Liverpool viâ Lisbon and Havre, and three proceed to New York viâ the West Indies. Starting from New York, the steamers return to Manáos viâ Pará, and thence proceed to Liverpool. A certain number of steamers also touch at Maranhão and Ceará, and also at Galveston.

Italian line, La Ligura Braziliana.

In addition to these, an Italian line of steamers, named "La Ligura Braziliana," plies between Genoa and Manáos, calling at Barcelona, Lisbon, and Pará. The company owns three ships, with a combined gross tonnage of 6,385 tons, and receives a subsidy of about 12,000*l.* per annum from the State of Amazonas. One steamer per month visits Manáos.

Portuguese line, Andresen.

A Portuguese firm named "Andresen Successores" own three steamers, with a combined gross tonnage of 4,864 tons, which make irregular visits to Manáos, starting from and returning to Lisbon.

Natural products.

The natural products of the State, which are numerous, belong chiefly to the vegetable kingdom. Rubber, caucho, Brazil nuts, cocoa, piassava, cupahyba oil, sarsaparilla, guaraná, cumaru, deer skins, heron plumes, and dried fish are exported, whilst rice, sugar, rum, tobacco, mandioca, maize, beans, and, in short, most cereals could be produced were not agriculture very much neglected, owing to the more profitable results obtainable from other sources.

It may indeed be said that the whole commercial importance of the State depends upon the extraction of rubber which is the paramount native industry.

Rubber.

Since about the year 1770 the usefulness of the latex of certain plants for waterproofing cloth has been known. It was not, however, until comparatively recent times that the rubber manufactured from this latex came into general use for many purposes, such as insulating material in electrical appliances, valves in machinery, waterproofs, macintoshes, &c. Of late years the enormous consumption of this article in the manufacture of bicycle tyres has created a very great demand. The supply not being able to cope with this demand the price has steadily increased, and considerable attention is now being paid to the production of rubber all over the world. So great is the demand at present that although the supply from the Amazon Valley alone has increased from 8,635 tons in 1880 to 25,370 tons in 1899, the approximate price of 2*s.* 6*d.* per lb. in 1889 has increased to 4*s.* 6*d.* per lb. in 1899.

World's supply.

The total world's supply to-day is about 120,000,000 to 130,000,000 lbs., valued at about 15,000,000*l.* sterling. In Table

No. 4 (p. 31) will be found an analysis of the world's consumption and supply.

Producing countries. At the present time laticiferous plants yielding "caoutchouc" or "rubber" are being worked for commercial purposes in Brazil, Bolivia, Central America, East and West Africa, whence come the chief supplies, whilst Guiana, the Eastern Archipelago, Madagascar, India, and Ceylon contribute a small quantity to the general stock. More than half the total supply is exported from the Amazon district.

Trees from which extracted in Brazil. In Brazil several kinds of laticiferous trees exist from which rubber is manufactured. In the State of Ceará the *Manihot Glaziovii*, locally known as the maniçoba, is fairly extensively worked, and considerable attention is being paid to its cultivation. In the State of Maranhão the *Hancornia speciosa*, or mangabeira, is beginning to give results. These trees, however, are unimportant compared to the *Hevea Braziliensis*, or seringueira, to which the Amazon Valley owes its present prosperity.

Maniçoba.

Mangabeira.

Seringueira.

Hevea Braziliensis. Habitat. The *Hevea Braziliensis* is found scattered through the forests that clothe the banks of the Amazon River and its tributaries. In some parts it is much commoner than in others, and for no apparent reason. Very large tracts of forest are to be found where it does not exist or is very scarce. It is generally met with in the swampy parts of the forest. Owing to the lack of trustworthy data on the subject it is not possible to state with

Distribution. certainty the proportion of *hevea* compared to other trees existing in the forest. However, for districts where it is fairly plentiful, and for areas of 1,000 acres or more, about one tree to every 2 acres may, I think, be taken as a fair estimate.

Description of the tree. The *Hevea Braziliensis* does not strike the eye amongst the other innumerable varieties of trees to be met with in the Amazonian forests, and is often difficult to detect. A peculiar

Leaves. glistening of the trifoliate leaves and the whiteness of the bark serve as a guide to the practised eye. The tree grows to the

Height and girth. height of 70 to 100 feet, and has, as a rule, when full grown, a girth of from 5 to 7 feet at a height of 1 yard from the ground.

Branches. The trunk is generally free from branches to a height of some

Flowering season. 30 or 40 feet from the ground. The tree flowers in January; the

Seeds. seeds are ripe and begin to fall in March in the case of old trees, and in May in the case of young trees. The seeds are contained in a hard shell, two, three or four in each shell, which hang by a short stalk from the upper and outer branches. When ripe the shell explodes often with quite a loud report, scattering the seeds

Packing the seed. to considerable distances. For this reason it is difficult to procure seeds. When collected the seeds should be packed in powdered charcoal and sent to their destination without delay. I am informed by a competent authority that they are not as a rule fertile if kept for more than two months after being collected. This fact would account for the difficulty experienced in rearing this plant in Africa, Ceylon, and other parts.

Varieties. Setting aside scientific phraseology and distinctions there are,

for practical purposes, three distinct varieties of the "seringueira" to be met with in the forest. These are locally known as the seringueiras "casca vermelha" (red bark), "barriguda" (bellied), and "casca preta" (black bark). The first of these, the "casca vermelha," grows in the higher parts of the forest which are seldom or never flooded. The latex which it yields is scanty, thick, and will not run. It is, therefore, of little value.

The second of these, the "barriguda," so named, because the trunk increases very rapidly in thickness towards the base, grows in those parts which are almost constantly flooded, named "igapós." It yields plentifully a thin watery latex which is of little value.

The third variety, the "casca preta," grows in those parts where a certain amount of drainage exists, and which form an intermediary zone between the permanently flooded parts and the high land. It is this variety which yields the latex from which the rubber of commerce is manufactured.

Latex.

The "latex," or as it is commonly known, the "milk" of the tree, is a milky juice contained in special tubes running amongst the other tissues of the plant. These tubes in the case of the hevea are connected, forming what is known as the "laticiferous system." The latex is quite different from what is called the "sap," and probably does not play any part in the nutrition of the tree. According to some authorities, it forms a reserve of water to be drawn upon in cases of drought. The actual extraction of latex cannot kill the tree, and the common statement that the trees are "bled" to death is a mistake. As a matter of fact, though trees exhausted, inasmuch as they will not yield any more latex, are common, actually dead trees killed by overtapping are rarely met with. The latex, as it exudes from the bark is of a dazzling whiteness, resembling milk, which it also resembles in composition, inasmuch as it consists of an emulsion in which "caoutchouc" takes the place of the "butter" in ordinary milk. The fluid part of the latex consists of water with very small quantities of albuminous matter, organic acids, and phosphates in solution.

Extraction of the latex.

The extraction of the latex, or, as it is usually called, the "tapping" of the tree, is effected by making an incision in the bark of the tree. From this incision the latex flows for about three or four hours, after that it stops flowing of its own accord. The incision should not penetrate beyond the bark, which is generally about $\frac{3}{8}$-inch thick, into the wood of the tree, and for this reason a very small axe, which rapidly thickens, wedge-like from the cutting edge is used, the shape of the instrument preventing its entering too deep. The axe is generally about $\frac{3}{4}$-inch wide. The custom is to strike with it a back-handed blow upwards, thus making an oblique cut in the bark. It is probable that a better method would be to use a chisel and mallet and make a V-shaped incision. Recent experiments at Henaratgoda have shown the advantage of this shaped incision.

Collecting the latex.

The incision having been made, a small tin cup of a capacity

of about 4 ozs. is affixed just below it to receive the latex as it flows. This is effected by pressing the edge of the cup, which is sharp, into the bark until it gets a sufficient hold to remain firm. By this method, however, a second wound is made in the bark which is injurious. No better method has as yet been suggested. In some places a winding groove is cut in the bark of the tree, and by means of a clay breastwork the milk is conducted into a vessel placed at the foot to receive it. This method is found, however, to be very exhausting to the tree and is falling into disuse. The usual mode of tapping is to make an incision with the axe at the height of some 6 or 7 feet from the ground; on a level with that incision and at a distançe of some 8 inches a second cut is made, and so on round the tree. On the next day incisions are made just below these, and so on day by day until they reach the ground. Incisions are then made on the same plan beginning as before from the top, and working downwards between the former rows. A tree that will carry seven cups 8 inches apart is considered a large one, and though trees that will carry eight or nine cups are to be met with, the average do not carry more than four or five.

Yield of latex per tree.

It is not possible in the present state of the industry to give any precise data as to the average yield of latex per tree. To begin with, the trees are extremely irregular in their yield. Two trees growing close together and under apparently precisely similar conditions, will often vary very much as regards their yield of latex. Some trees are very rapidly exhausted, whilst others have to be tapped for some time before they yield the full amount of latex of which they are capable. The natives account for this by saying that the tree has to be accustomed to being tapped. Sufficient data are not available to enable any judgment to be formed as to the correctness of this view. It is certain, however, that even the most experienced cannot judge of the value of a rubber estate before at least a year's work has proven it. The examination of the books of a number of rubber estates actually working and from reliable information received, leads me to believe that, for estates working with over 20 men, a yield of 300 kilos. per annum per man may be expected should it be a good district; 200 kilos. should the district be only fairly good; and 100 kilos. per annum per man should the estate be already overworked. As each man works 200 trees, this would place the yield of one tree, when worked under satisfactory conditions at 1 to 1½ kilos. per annum. On the same basis and taking the whole of the crop from the Amazon district as being 24,000 tons (about) per annum there would appear to be about 120,000 labourers employed in cutting rubber at present. Calculating still on the same basis there should be some 24,000,000 trees being tapped, and these on a basis of one tree to every 2 acres would give an area of about 50,000,000 acres of forest at present being worked for rubber. When it is considered that the district in question embraces well over 1,000,000 square miles, and that it is by no means easy

Number of labourers working.

Number of trees being tapped.

Acreage being worked.

to find virgin rubber forest within 200 or 300 miles of Pará or Manáos, it will be seen how comparatively scarce is the *hevea* in the Amazonian forests.

Area of the trunk to be tapped.

The *hevea* is found to yield its latex more freely at the base than higher up the trunk. In some places, however, where the trees have already been considerably worked, and the lower part of the trunk is already covered with knobs due to excessive tapping, it is the custom to build stagings in order to enable the rubber-cutters to reach a higher portion of the trunk. A good tree will still yield freely to a height of some 20 or 30 feet.

Life of a tree.

If allowed to rest for three or four years, even a completely exhausted tree will quite recover itself, and may be worked again from the base. As has been already stated, the tree is not killed when the supply of latex runs short, and as a rule sufficient damage has not been inflicted to prevent the tree from recovering itself. This fact is important, as owing to it the supply of rubber available will probably not run short as has been often prophesied of late. Trees have been known to have been tapped off and on during 50 years, and to be still yielding a plentiful supply of latex.

Preparation of the rubber from the latex.

The latex having been obtained and collected the "caoutchouc," or rubber known to commerce, may be obtained from it in various ways. The only method, however, that has met with practical success is that of evaporation, by which the watery portion of the latex is driven off and solid caoutchouc remains. The object to be secured is that as little water and proteid matter shall remain in the caoutchouc, the putrefaction of the caoutchouc, owing to the presence of these matters being extremely detrimental to its elastic properties, and, therefore, to its market value. In the Amazon district the method followed is to light a fire upon the ground and to invert over it a specially constructed funnel-shaped chimney. From the narrow end of the funnel, which is open, the smoke and heated gases pour out in a concentrated form. The fuel used for the fire consists, as a rule, of chips from any hardwood tree that grows handy to the labourer's hut. The nuts of the "Urucury palm" (*Attalea excelsa*) are sometimes used, their smoke containing a trace of acetic acid and creosote being found particularly effective in curing the rubber and preventing putrefaction. It is, however, a mistake to suppose that all or even a large proportion of the rubber coming from the Amazon district is cured in this way. It is, on the contrary, very rarely that the rubber-cutter will be at the trouble to collect these nuts, he nearly always prefers to use wood chips which give him less trouble to procure.

Mode of smoking the rubber.

The fire having been made, and a large stream of hot smoke pouring out of the chimney, the operator seats himself on a small stool by the side of it. The latex is contained in a basin placed at hand. In his right hand he holds a paddle-shaped piece of wood; in his left hand a small calabash. Dipping the calabash

into the basin of latex he pours a small quantity over the paddle, which he then revolves in the smoke issuing from the chimney. That having dried in a layer over the paddle he repeats the operation. In course of time a "ball" or "biscuit" of solid rubber is thus formed. In some parts, where it is the custom to manufacture very large balls or "pellets," an arrangement is made by means of a pivot to rotate the ball over the chimney. The wooden core is withdrawn through a slit made in the "biscuit," or simply drawn out in the case of the "pellet."

Adulterations. The latex of a tree named "Maçaranduba" (*Mimusops elata*), and more often that of a tree named locally "Amapá," is sometimes used to adulterate that of the *hevea*. In both cases the adulteration is extremely prejudicial to the quality of rubber produced.

Qualities of rubber. Three distinct qualities of rubber are manufactured in this district named "Fine," "Entrefine" and "Sernamby" respectively.

Fine. "Fine" rubber has been well smoked, and is free from putrefaction.

Entrefine. "Entrefine" rubber has been either burnt whilst being smoked, or has been insufficiently smoked, and has therefore putrefied. It is due to carelessness on the part of the workman, which it should

Sernamby. be possible to avoid. "Sernamby" is the "negro-head" of commerce, and consists of scraps, mixed with dirt, or strips peeled off the bark of the tree and mixed with impurities of sorts.

Loss of weight. A very important factor, from the merchant's point of view, in the rubber trade, is the loss of weight that is constantly taking place in raw rubber. This loss is extremely variable, and a consignee has to place the greatest faith in the consignor that the invoiced weight of rubber has really been shipped as more or less shortage invariably takes place. Moreover, the shrinkage in weight is so variable that no exact figures can be quoted by which it may be calculated. The cause being the evaporation of the water contained, it varies according to the quality, being greater in the case of the porous "Sernamby" than in the firmer "Fine" rubber. The longer rubber is kept and the larger the pieces the less it loses in weight. Dry "Sertão" rubber coming from distant parts whence shipments are only made once a year will lose only about 1 per cent. between the estates and Manáos; whereas newly-made rubber coming from close at hand will lose as much as 10 per cent. As the means of communication get more rapid, and the rubber reaches Manáos sooner after being manufactured the tendency to lose in weight becomes larger. Between Manáos and foreign markets a loss of 4 per cent. may be taken as an approximation of the average loss of weight.

Centrifugalisation. A machine designed on the principle of a cream separator to separate the caoutchouc from the watery part has been tried, but has not proved successful as regards the latex of the *hevea*, though good results have been stated to have been attained with the latex of the "castilloa."

Coagulation. Another means of separating the caoutchouc is to add chemical reagents which cause the latex to coagulate. Of these acetic acid and corrosive sublimate have been found to give the

best results. The latter owing to its antiseptic properties would appear particularly suitable. A solution of alum is used to a small extent in the State of Matto Grosso, to prepare rubber from the latex of the *hevea*.

The following analysis of the latex of the *Hevea Braziliensis* is given by Seeligman:— **Composition of the latex.**

	Analysis.
	Per cent.
Caoutchouc	32
Nitrogenous matter	2·3
Salts	9·7
Resinous matter	traces
Water	55 to 56

Shipment of the rubber. The rubber having been prepared it is shipped from the estates in "balls" or "pellets" to merchants in Manáos, and by them sold to one or other of the export merchants in the same condition as received. By the export merchant it is cut up into small pieces, the "Fine" separated from the "Entrefine," and then packed in wooden cases, each case holding about 170 or 160 kilos. It is then shipped to Europe or the United States as the case may be. Owing to the loss of weight already mentioned each merchant is obliged to have his own store, as no warehouseman could give a receipt for a quantity of produce the weight of which is constantly varying. For the same reason rubber is rarely sold by auction.

Commercial system. The commercial system by means of which the working of rubber estates is effected is somewhat complicated. Goods are in the first place imported from abroad by one class of merchants named "Importadores." **"Importadores."** In Manáos and Pará most of these are at present Portuguese houses. They usually buy on 90 days' credit. The goods are then sold on the Manáos market to another class of merchants named "Aviadores," who generally buy on **"Aviadores."** a 12 months' credit. These "Aviadores" then ship the goods up-country to the estate owners. The "Aviador" business is chiefly in the hands of Brazilian and Portuguese firms. The estate owners then barter these goods to the men working their **Estate owners.** estates, who are not so much labourers as small tenants, the rubber trees being leased to them, for the rubber which they extract, paying them any difference that may remain to their credit, over and above the value of the goods supplied to them, in cash. This rubber is then shipped by the estate owners to the "Aviadores" in payment of the goods that have been consigned to them. The "Aviadores" on receipt of the rubber sell it without delay to avoid loss in weight, to one of the exporting firms, receiving payment at once, in cash. With this the "Aviadores" pay the "Importadores." The exporting houses cut, pack, and ship the rubber drawing against shipments, generally on London credits, at 90 days' sight, and selling their bills to bankers at Pará.

Shipping documents have generally to accompany the draft, and in case of shipments to the United States, a certified Consular invoice. Manáos being without telegraphic communication, and consequently without foreign banks, the exporting houses which buy rubber on this market are obliged to keep a supply of cash in hand to pay for rubber bought, which as has been already stated has to be paid for at once in cash. Such is the so-called "Aviador" system, and so far it has been found to answer better than other methods of doing business. Suggestions have been made whereby it is proposed to eliminate some of these middlemen, and to bring the consumer into closer contact with the producer. In order to study this question it is necessary to consider the conditions under which the rubber estates are at present being explored and worked.

Exploring and working of rubber estates.

The *Heva Braziliensis* is, as has already been stated, scattered through the Amazonian forests. In some places it is much more frequently met with than in others. Nothing but actual exploration and trial will enable the most experienced person to form any reliable opinion as to the value of a block of forest. The

Exploring.

manner in which explorations are conducted is as follows:—An individual who enjoys a certain amount of credit in Manáos charters a small launch and freights her with a cargo of food, clothing, and implements necessary. He then proceeds to search in the low class hotels and boarding houses at Manáos and Pará, or perhaps he may even go to the State of Ceará whence the labouring classes are chiefly recruited, for a number of men with whom he intends to work his estate. These he engages, not on wages, but on the condition that he will barter his goods for the rubber they extract. Most of these labourers draw a considerable advance before they can be persuaded to go up-country. With this cargo and crew he proceeds to the district where he intends to work. Having arrived at a place which he considers promising, he despatches some of the most practised labourers, or "Seringueiros," as they are here named, to explore the forest, find the rubber trees, and open the paths between them. With the remainder he builds a store, known as the "Barracão," in which he stores his goods, and which becomes a rendezvous or nucleus for the colony. The men all this time are living at their own expense, the price of supplies given to them being debited to their account, to be paid for in rubber later on. The forest having been explored, the trees located and connected by paths, known as "Estradas," the men select which they are going to work. Each "Estrada" makes a loop, visiting generally some 100 or 150 trees, and returning to the starting point, generally on the bank of a river or stream navigable for canoes. Each man builds his own small hut, or "Baraca," where he lives and from which he works the two "Estradas" which he has selected. From time to time he pays visits to the central store to obtain goods, and deliver the rubber he has collected. This the owner of the store, or the "Patron" as he is termed buys from him at a price, generally fixed by the "Patron" himself, and credits him with

the amount as a set off against the goods that have been supplied to him. As the "seringueiros" can, as a rule, neither read nor write, the opportunities of an unscrupulous "patron" are great. At the end of the season, that is to say, in January, most of these men return to Manáos. A fresh lot is generally taken up by the "patron" each year.

The labourer or "seringueiro" spends his day much as follows. Rising from his hammock just before daybreak he takes a cup of black coffee. He then proceeds to tap the trees in one of the "estradas," affixing at the same time the cups to catch the latex as it exudes. The necessary cups are placed at the foot of each tree at the time that the "estrada" is being opened. By 9 A.M. he has tapped the trees and is back in his hut. He then proceeds to cook and eat a scanty meal. At about 11 A.M. he again visits the trees taking with him a vessel into which he pours the contents of the cups. By 1 P.M. he is again in his hut. He then proceeds to smoke the latex he has collected during the day. The latex cannot be left standing over night, as fermentation sets in and "entrefine" rubber is the result. It is almost invariably, therefore, smoked each day as collected. By 2 or 2.30 P.M. he has generally finished his day's work and can spend the rest of his time in idling, hunting or fishing as he pleases. On the following day he rests the "estrada" which he worked the day before and works the other. An active man sometimes works four "estradas," two each day. Such men are known to produce as much as 1 ton of rubber in the season. It is on such performances as these that calculations quoted in prospectuses of rubber companies distributed in the United Kingdom seem to be based. They are, however, quite erroneous when applied generally. In a good place an average man will make as much as 4 kilos. of rubber in a day, but it must be remembered that he does not work all the year round, and that he loses many days when it is raining or when he thinks it is going to rain. Any excuse is good enough to prevent a "seringueiro" from going into his "estrada."

Season for working.

The season during which the "estradas" are worked lasts from August till the beginning of January. During the remaining months of the year there is generally too much water in the forest to allow the "seringueiros" to enter the "estradas."

Opportunities for British enterprises. Companies.

When considering the question as to whether British companies have here a good opportunity for the investment of capital the following points should be borne in mind. Rubber is brought down to Manáos at the present day from beyond Iquitos in Peru, and from beyond Orton on the River Beni in Bolivia, and goods are shipped to there from Manáos. A glance at the map will show how remote are these places. It is reasonable to suppose that natives of the country, who well understand the matter, would not go and explore so far a field if workable forests existed nearer home. The fact of their doing so, points to the probability that most of the forest worth obtaining in the neighbourhood of Manáos has already been taken up. Of course this

does not mean that a company could not purchase already opened up estates, in good condition, and do good business with them. But again certain difficulties to be encountered should be remembered. The greatest of these is the quantity and quality of the available labour supply. A company would have to work on a large scale and have a well ordered system. The labourers to be found in Manáos are an extremely independent, not to say unruly class, and although the comparative rarity of crime up country speaks well for their conduct on the whole, yet they are so unused to obey any sort of discipline that it would be very hard to work with an organised estate, especially as there is practically no legal authority outside the towns and every man's will is, up country, a law unto himself.

Individual enterprise.

For the individual enterprise of that class of men which has done so much in opening up other tropical countries, men of resource and adaptability who prefer a rough life, there is probably a good field in Amazonas. Beginning, as they naturally would, on a small scale, and extending their business, they could probably do well. When the way has been opened by these, and a class thus created who really understand the business, there will be more opportunities for companies to work with success. It must be remembered that at the present time rubber export merchants have many difficulties to contend with. There is considerable competition in their business, and there are the unending and baffling variations in exchange. A company that owned rubber forests on a large scale could avoid exchange transactions almost entirely. The necessary goods imported would be paid for in London by the results of the sales of the rubber produced. Moreover once a rubber estate is in good working order it should be possible to make very certain calculations as to its annual yield. Taking these points into consideration, it would appear that the natural extension of the rubber merchant's business will be in the direction of securing the actual forests and lands in order to control the supply. No doubt means will be found eventually to overcome the difficulties stated above.

Prospects of the industry.

Owing to the recuperative power of the tree it is improbable that the available supply of rubber from the Amazon valley will be exhausted in the near future. Also the enormous area over which the estates extend, makes it unlikely that unexpected events should occur by which the industry as a whole would be damaged, although, no doubt, local checks may be expected from time to time to occur. For the same reason, and owing to the scarcity of labour, it is improbable that any very sudden increase or decrease of the annual production will occur. The tendency is at present for a slight increase of the total production each year.

The best districts.

The best district in Amazonas is commonly reputed to be that of the River Acre and the headwaters of the Purús.

British companies.

Two British companies are at present established in the Amazon valley, namely, the Pará Rubber Estates Limited and the Amazonas Rubber Estates Limited. The former have an already

opened estate in the islands near Pará, whilst the latter are breaking in virgin forest on the headwaters of the River Teffé in the State of Amazonas.

Other companies.

Besides these, a Belgian company named "La Brésilienne" is working an estate near Pará, whilst a French company, the "Comptoir Colonial Français," is working some estates on the River Javary. Several other French, German, and Belgian companies are said to be about to be organised for the same purpose.

Caucho.

Caucho is a vegetable product similar to rubber in many of its qualities, but inferior to it in usefulness. It is obtained by tapping trees much in the same way as rubber. The tree from which it is obtained is a variety of the "Castilloa." This tree prefers drier parts of the forest than the *hevea*.

Laticiferous system.

Owing to the fact that the laticiferous system is not connected throughout the tree, it is not possible to drain all the latex by tapping only a small area of the bark, as is the case with the *hevea*. The tree has, therefore, to be cut down in order that the whole tree including the branches and twigs may be tapped. The roots also, which often project above the ground, are tapped. I am told that it takes as much as 15 days for the whole of the latex to exude from the tree. The latex is collected first in small cups placed to receive it, and subsequently is poured into a suitable vessel, or sometimes into a trough cut in the tree itself or into a hole made in the ground. A small quantity of soap solution is added to it to produce a more rapid coagulation. The juice of a creeper named "vitelha" is generally added for the same purpose. When the latex has coagulated, which takes some days, the mass is taken out and caucho "slabs" are thus formed. Caucho "balls" are made by rolling up strips of the coagulated latex that has exuded from cracks in the bark. By common accounts an average caucho tree will yield from 30 to 40 lbs. of caucho including the scraps.

Coagulation.

Owing to the fact that the trees are cut down and destroyed, the collectors, or "caucheros" as they are called, are constantly moving about to discover fresh trees. Whereas at one time nearly all the caucho came from Peru, it is now more extensively worked on the Javary. During 1899 a large amount was also received from the Purús. The actual work of exploring and tapping caucho trees is still done chiefly by Peruvians even in Brazil, the Brazilians preferring to work the *hevea*.

Brazil nuts.

Brazil nuts, known locally as "Castanha," are the fruit of the *Bertholletia Excelsa*. This tree is one of the most imposing amongst the giants of the Amazonian forests. It is explored and worked on similar lines to the *hevea*. In this case each "estrada" or path visits some 350 to 400 trees. The nuts are contained, six or eight together, in a hard shell. The fruit grows on the outer branches of the tree, and ripens and falls during the months of January, February, March, and April. Two men generally work one path together, one collecting the nuts and the other opening them by means of a large knife or machete. Two men working a good path of 400 trees are said to collect about

1,000 barrels or 1,200 hectolitres of nuts in a season. As the total crop is about 100,000 hectolitres per annum, there should be about 25,000 trees actually being worked, yielding about 4 hectolitres each per annum. The nuts when collected are shipped first to Manáos, where they are sold to some export merchant generally by auction. For some reason the production of nuts varies very much in quantity from year to year.

Cacao. But little attention is paid to cacao planting in the State, most of the Amazon cacao coming from the State of Pará. The difficulty and expense of procuring labour no doubt is the reason of this. Such plantations as exist, however, show that the plant grows extremely well here. Wild cacao plants are met with very frequently in the forest, in some places in such large quantities that they would appear to be indigenous, although they may be due to chance scattered seeds. The fruit ripens during the month of February, and reaches the Manáos market during the months of April, May, June, July, and August.

Piassava. Piassava is a vegetable bristle used for making brooms, brushes, &c. It is the product of a palm found in various parts of Brazil. In Amazonas the producing district is the Rio Negro and its affluents. The palm first flowers, and as this flower fades a pod is formed. When ripe this pod bursts, and a bunch of filaments attached to a stem is left to the tree just below the point where the leaves sprout. These bunches are cut down and sent to the market. The filaments should be of a light brown colour and quite dry. It is an article which varies very much in price.

Cupahyba oil. Cupahyba oil or "balsam" is a vegetable oil obtained from the *Copaifera multijuga*. It is useful for medicinal purposes. The tree grows in the drier part of the forest. The centre of supply in Amazonas is the Madeira and its affluents. The whole of the wood of the tree seems to be impregnated with the oil, as

Extracting the oil. it oozes from chips or twigs when cut. The method by which the oil is extracted is to bore a hole in the trunk of the tree at a height of some 2 feet from the ground. Into this hole is placed a funnel, by means of which the oil is directed into a vessel placed to receive it. It is a belief amongst the natives that the flow of oil is very much affected by the state of the moon, being greater at full moon. I have not had the opportunity of verifying this statement, but it is certain that the flow varies very considerably. After being tapped for a certain time the tree becomes exhausted and ceases to yield. If the hole be stopped, however, it recovers, and may after an interval be tapped again. The tree yields according to its girth and size. A large tree measures 8 to 10 feet in girth, and is said to yield as much as 30 gallons of oil before being exhausted.

Sarsaparilla. Sarsaparilla is a creeper found in the Amazonian forest, the roots of which yield a valuable medicinal extract. But little attention is paid at the present day to this product, the demand being very small.

Guaraná. Guaraná is a medicinal preparation made from the fruit of a shrub named *Paullonia sorbilis*. The fruit is pounded, or, it is said,

sometimes chewed into a pulp, and then moulded into short thick sticks, and allowed to harden. It was at one time exported in small quantities to Europe and the United States. There is, however, at present practically no demand for this drug in Europe. The small amount made is sent now to Rio de Janeiro and to Matto Grosso viâ Buenos Ayres. The people there take it as a nerve stimulant and refreshing drink. To take it the stick is filed, and the dust thus obtained mixed with sugar and water and drunk.

Cumaru. Cumaru or "tonga bean" is the seed of the *Dipteryx odorata*. The beans grow inside a pod. When ripe the pods are picked, the beans extracted and dried. There appear to be two qualities of tree, the seeds of one quality crystalising in the process of drying, whilst those of the other do not. The former quality is considerably more valuable than the latter. The seeds contain an aromatic oil, and are used in the preparation of tobacco. There is at present but a very small demand for this product.

Deer skins. Deer skins are exported to a very small extent to New York. They are taken from a small forest deer which are occasionally shot by the men on rubber estates.

Heron plumes. The export of heron plumes is also at present very small, owing to the decrease in the demand, and the fact that most of the heronries where the birds used to nest are deserted, on account of the slaughter that has taken place among them. There are two varieties of herons that supply the plumes, one of which is considerably larger than the other. The smaller variety supplies the best curved plumes. These plumes grow on the back of the neck of the male bird, and should be taken during the breeding season. It is said to take as many as 30 birds of the small variety to yield 1 ounce of feathers.

Dried fish. A certain quantity of dried fish is exported to Pará. The fish which supplies this is locally known as the "pirarucu," and often weighs as much as 200 lbs. It is caught with hook and line, harpooned, or shot with bow and arrow whilst basking near the surface. The harpoon or arrow, as the case may be, is ingeniously armed with a detachable head made of iron, barbed, and attached by means of a line to the shaft of the weapon. When the fish is struck the arrow-head remains embedded in the body whilst the shaft rising to the surface shows the whereabouts of the fish.

The preceding are the principal products of the State of Amazonas.

Agriculture. Agriculture, as has been already remarked, receives but little attention, and foods are imported to a very great extent. It is obvious, however, and has been amply proved by experiment, that on a vast alluvial plain periodically covered by floods, which cover a large area with a fertilising deposit at regular intervals, as is the case here, immense crops might be raised of every kind of cereal. Moreover the district is especially fortunate in the absence of droughts, locusts, and other plagues. Should at any time in the future labour become more plentiful the Amazon Valley will no doubt become a great food-producing centre. At

present the inhabitants are no doubt wise in confining themselves to those industries to which the natural conditions most readily lend themselves. The heavy import duties, however, make themselves felt as a serious drawback, the expense of living being unusually high.

Export trade. Having considered the natural products of the country I will now turn to the export trade. A detailed statement of the quantity and value of the various exports will be found in Table No. 5 (p. 32). A glance at this table will show how enormously the export of rubber preponderates over that of any other produce. The great bulk of this rubber is exported to the United Kingdom and the United States. The trade in Brazil is in few but very strong hands. The business is, however, cut very fine, the price in Liverpool being frequently below the corresponding price quoted in Pará. In fact, it is often hard to see how a profit can be made. The absence of auction sales, or any sort of recognised rubber exchange makes it very difficult, however, to ascertain the exact price paid in Brazil. The sales are generally effected by word of mouth, and prices not disclosed. The official value is always only an approximation to the actual value. In Manáos, too, the price is often extremely high. Considering that intervals of five and very often as much as 10 days elapse without any advices being received from Pará, the business must be very speculative. The lack of telegraphic communication is a very serious drawback. The price of rubber is calculated by the merchants on a sterling basis, but paid for by them in currency. They then draw against these purchases on their London correspondents selling their bills for currency at the best rate obtainable from the banks. In Pará, where there are banks and telegraphs, and the two operations can be performed almost simultaneously, the business is comparatively simple. But taking into consideration the absence of the telegraph at Manáos, the extraordinarily rapid differences that occur, not only in the market value of rubber, but especially in the value of Brazilian currency, it will be seen that the business must be extremely difficult to conduct.

Export tax. All exports are taxed more or less by the State. A statement of these taxes will be found in Table No. 5 (p. 32). In addition to the amounts here mentioned there is generally a municipal tax of 1 or 2 per cent.

Local manufactures. For the same reason that agriculture is neglected, but little attention is paid to local manufactures.

Ice factory. A small ice factory exists, the property of a Brazilian firm.

Brick factory. Two small brick factories also exist, one of which turns out about 100,000 bricks per annum, and the other considerably less.

Imports. The State depends on the imports for staple articles of both food and clothing. These imports are extremely numerous and varied.

Foods. **Farinha.** Amongst foodstuffs, "farinha," a coarse meal, somewhat resembling oatmeal, made from the root of the mandioca plant, takes the place of bread. It is eaten by the poorer classes in the capital, and by all classes up-country. The chief source of supply is the State of Maranhão.

"Xarque," or "jerked" beef, beef dried in the sun, is imported from Rio Grande do Sul and Buenos Ayres. Xarque.

Cattle are imported from the Lower Amazon (Pará) and the States of Piauhy, Maranhão, and Ceará. A few shipments of cattle from the River Plate have from time to time been made, but for one reason or another they have been discontinued. A regular service between the River Plate and Manáos has been a good deal talked of but not yet realised. There should be a good opening for trade in that direction. Frozen meat has not yet been introduced though also suggested. Considering the lack of meat, and the bad quality of that supplied there should be a good market for this article here. Cattle.

Tinned foods are imported from the United Kingdom, the United States, and Rio Grande do Sul. There is a very large demand for this line of goods. Tinned goods.

Dried codfish is extensively imported from the north of Europe viâ Germany (Hamburg). Codfish.

Rice is imported from Rangoon viâ Liverpool by steamer. There should be an opening for direct importation from Rangoon by sailing vessel to Pará. Rice.

Although the country could well produce large quantities of maize, this article is at present imported from Maranhão and Argentina. Maize.

Wheat in grain is not imported. Wheat.

Flour is imported largely from the United States. Flour.

Beans are extensively imported from Argentina and the south of Brazil. Beans.

Light beers are extensively imported from the United States, Germany, and Rio de Janeiro. There is a large consumption of stout and India pale ale. Beer.

Wines are imported chiefly from Portugal, Italy, and France; the greater part from Portugal. Wines.

Fresh vegetables are imported from Portugal. Vegetables.

Salt is imported chiefly from the United Kingdom and also from Portugal. Salt.

There is a very large demand for cotton goods. Manchester firms continue to supply the greater amount though the United States have entered the market with drills and sailcloth, and Germany is making a great effort by means of travellers and long credits to get a hold on the market. Clothing. Cotton goods.

There is a small demand for woollen goods, supplied by Germany. Woollen goods.

There is a very small demand for silks, which are imported chiefly from France. Silks.

Germany, at present, supplies tweeds and serges, France having to a great extent lost this trade. British goods are too dear for this market. Tweeds.

There is a considerable demand for soft felt hats, which are imported from Germany, Portugal, and the south of the Republic. Straw hats come from the United States and Germany. Hats.

There is a demand for boots, of a light and medium light Boots.

quality. The labouring class going nearly all bare foot, there is but little demand for heavy qualities. Austrian manufactures imported viâ Germany supply the light and ornamental lines, whilst the United Kingdom supplies the medium.

Umbrellas. Umbrellas of a somewhat inferior quality are imported from Germany. There is a good demand for them.

Macintoshes. Macintoshes are imported from Germany.

Fancy goods. Fancy goods and stationery come chiefly from Germany, also from France.

Jewellery. Jewellery is imported from Germany and France.

Clocks and watches. Clocks and watches are imported from Germany and the United States. The excellent quality of the latter combined with their cheapness are rapidly securing for them a monopoly.

Hardware. It is regrettable that except in very few lines the hardware trade is rapidly being monopolised by American and German manufacturers.

Tools. Knives, woodman's knives, cutlery, axes and carpenter's tools are imported chiefly from the United States, Germany, and to a smaller extent from the United Kingdom.

Cooking utensils. Stoves are imported from the United States. Cooking pots and pans from the United Kingdom and Germany.

Basins. There is a good demand for tin basins which are imported from the United Kingdom.

Earthenware. Plates, &c. Plates and dishes come chiefly from Germany, French goods having dropped out of the market to a great extent. Some are also supplied by the United Kingdom.

Jars. Earthenware jars are extensively used and come chiefly from the south of Brazil.

Building materials. Timber. Timber, sawn, is extensively imported from the United States, coming chiefly from Pensacola viâ New York. It is white pine and is used for casing rubber.

Stone. Granite blocks are extensively imported from Oporto and Lisbon, chiefly for pavements.

Bricks and tiles. Bricks and tiles are extensively imported from France (Marseilles), Italy (Genoa), and Portugal (Lisbon).

Cement. Cement is imported from the United Kingdom, France, Germany and Italy.

Lime. Lime is imported from Italy and the south of Brazil.

House fittings. House fittings, iron girders, pillars, &c., are imported chiefly from the United Kingdom.

Locks. Locks from Germany and the United States.

Electrical fittings. Electrical fittings, lamps, &c., are entirely of American manufacture.

Various: Kerosene. Kerosene is imported from the United States.

Matches. Matches are imported viâ the United Kingdom and viâ Germany from Sweden.

Furniture. Furniture is imported from the United States, Austria viâ Germany, and the south of Brazil.

Fire-arms. Fire-arms are imported from Belgium, Germany, and the United Kingdom. There is a large demand for very light, cheap, muzzle loading shot guns, single and double barrelled. These are preferred by the natives to any other arm.

General remarks.

It is not possible owing to the lack of published statistics to state with accuracy in what proportions the import trade to the State is divided up amongst the various exporting countries. Reviewing the present imports and their origin compared to that of past years, I should think that the trade with France has fallen off considerably, that with the United Kingdom has fallen off slightly, and that with Germany and the United States has increased considerably. The usual complaint is commonly heard that though British goods are preferred, their expense makes it impossible to import them in many cases. It should be remembered in preparing goods for this market that the climate and dampness of the atmosphere are extremely detrimental to property, and that owing to the difficulty existing in obtaining domestic servants it is impossible to take proper care of valuable articles. It is very natural, therefore, that the purchaser should generally prefer the cheaper article though he may be aware that it will last but a short time. It is positively not worth while to buy well made and durable articles in these parts. Although a customer may lament the inferiority of the articles supplied to him to-day, as compared to those supplied 10 years ago from the United Kingdom, this will not prevent him from buying the cheaper and more showy article next time he goes out shopping. Another very good reason for the disappearance of many lines of British manufactures from the market is the lack of travellers representing British firms that visit the country. Too much attention cannot be paid to this point. The "personal equation" is an all important factor in business transactions in Brazil, and there is probably no better field for a capable man to show his capabilities. I believe that the mere distribution of catalogues and price-lists, unless accompanied by travellers, even if written in Portuguese is of but little value. They are more likely to suggest business to competing firms into whose hands they are bound to fall than to bring business to the firm that sends them. The only way to push a business in Brazil is to have good travellers and good agents. German manufacturers are aware of this, and their travellers are very much more frequently to be met with than those of British firms.

Manáos.

Position.

Site.

Population.

Manáos, the capital of the State of Amazonas, is situated in lat. 3° 8′ 4″ S. and long. 60° W., on the left bank of the Rio Negro, about 8 miles from the juncture of that river with the Rio Solimões. The site of the town is good, being on slightly undulating ground. The river bank here is higher and less swampy than in most places. The town has at present a population of about 40,000, having increased very considerably during the past few years.

Health

For natives of Brazil Manáos is, on the whole, healthy. European residents have of late years suffered considerably from malarial fevers, which seem to have become more frequent. Yellow fever occurs only in a sporadic form. Small-pox epidemics have occurred, but are very rare. Beriberi and other complaints

resulting from tropical fevers are met with, but are not common.

City improvements. Drainage. As only the central part of the town is supplied with a drainage system, this leaves a good deal to be desired. Typhoid, gastric, and enteric fevers are, however, very rare.

Water supply. The city is now fairly well supplied with water. Though the source of supply is a forest stream the water is fairly good. The water is pumped first into a reservoir and then gravitates over the town. The reservoir is remarkably fine, being an iron tank supported on metal pillars, and of a capacity of 1,200,000 gallons. The waterworks are the property of the Government.

Tramway. An American syndicate, named the Manáos Railway Company, have recently constructed an electric railway, which is a great boon to the inhabitants of the city. The line has a total length of about 14 miles, and is said to have required an outlay of about 120,000*l.* to 150,000*l.* The rolling stock consists of 22 passenger cars and 15 waggons for sand, luggage, &c. There is a good and frequent service of cars. Should exchange keep up it is probable that the company will reap the profitable results which they certainly deserve. The concession granted to the company is for 99 years, and is inclusive of other similar enterprises within the city during that time. On the lapse of the concession the property reverts to the Government. The company receives an annual subsidy of 200 contos of reis, equal to about 6,500*l.*, from the State Government.

Electric light. The city is extremely well lit throughout with arc lamps, whilst many of the private houses have installations. The plant was first installed by an American syndicate, and subsequently purchased by the State Government, to whom it now belongs.

Pavement. Most of the streets have been paved with granite cubes imported from Portugal. One or two streets have recently been paved with compressed asphalte blocks supplied by an American firm. These blocks consist of 80 per cent. granulated basalt rock and 20 per cent. asphalte. They are supported by a cement foundation some 4 to 5 inches in thickness. This pavement, although expensive, seems to be very satisfactory. It does not get slippery when wet.

Bridges. Two iron bridges of some size have been erected of late years connecting the city with the suburbs. They are of British manufacture.

Embankments. A considerable amount of money has been and is still being spent in constructing embankments, filling up hollows, and levelling hills, with the object of making the city streets level and at right angles to each other. The natural drainage has been very much interfered with thereby, and a complete artificial system will now have to be constructed.

Theatre. A very large and commodious theatre has been constructed on a well chosen site.

Courts of justice. Courts of justice on a very large and magnificent scale have been constructed. A palace for the Governor on a similar scale is in course of construction.

Two good-sized hospitals exist, and a large sum of money has been voted by Congress for the construction of a third. **Hospitals.**

As has been already stated the arrangements for the discharge of cargo at this port leave very much to be desired. Cargo has at present to be discharged into lighters, which are often insufficiently numerous to meet the demand. By this ships are frequently delayed. Added to this the custom-house is small, and has not a sufficient staff to cope with the entries of cargo. The result being that cargo remains for weeks in lighters. A lighter of 400 to 500 ton capacity will generally command a daily rental of about 3*l*. **Harbour.**

Several wharves, erected on screw piles, supplied chiefly from the United Kingdom, exist on the riverside. They do not, however, project sufficiently far from the bank to enable ocean-going steamers to discharge alongside, except in cases of steamers of very light draught, which do so when the river is high. **Wharves.**

There is, owing again to the difficulty in obtaining labour for building purposes, a great lack of houses, stores, and warehouses, the rents for which are very high. **House rent.**

The State Government receives, as will be seen by Table No. 12 (p. 39), a very large and steadily increasing revenue from the tax on exports. Nevertheless, during the latter part of 1899 the Treasury was short of funds and payments were made in promissory notes, redeemable at their face value at various dates. They were accepted by the State as payment of export duty as soon as issued, also at their face value, but not more than half of any payment could be made by means of them, the remainder having to be paid in cash. **Finances of the State.**

Although the State has no Public Debt, yet in the beginning of 1900 the Government incurred some very heavy obligations in public works, in expropriations, in the founding of a State bank, and in various other directions. These, in addition to other outstanding obligations not yet liquidated, amount to a considerable figure To meet this the Executive in April, 1900, sanctioned the floating of a loan of 2,000,000*l*. A French house established in Manáos has taken the matter up, and negotiations are said to be in course of being made to float this loan in Europe. Although it is not probable that the State revenue will decrease, yet it must be remembered that should the question of the boundary between Bolivia and Brazil be decided in a manner unfavourable to the latter country, this State will lose in the Acre district a very considerable source of revenue. **Public debt.** **Proposed loan.**

One of the greatest drawbacks under which the State of Amazonas at present labours is the lack of telegraphic communication with the rest of the world. Business, into which exchange transactions enter, is thereby rendered very speculative. Foreign banks are unable to establish themselves, and the general progress of the town very much impeded. Attempts are being made to remedy this state of affairs. **Telegraphs.**

The Amazon Telegraph Company, Limited, has been for the past four years making praiseworthy efforts to establish a sub- **Amazon Telegraph Company.**

fluvial cable between Pará and Manáos. Hitherto the company has not been able to maintain the continuity of the cable except for a very short time. The action of the river current is found to wear down the cable, whilst logs catch in it and break it. In addition to this, the cable in parts becomes so imbedded in the clay-bed of the river that it is found impossible to drag it up; the result of this being that large portions of cable have to be abandoned and fresh cable laid. As the cable costs about 100*l.* per mile by the time it is laid down, the expense of this is very great. The company receives about 17,000*l.* annually in subsidies from the Federal Government when the cable is in full working order.*

Land line.

Recently the same company has entered into an arrangement with the Government at Manáos for the construction of an overland telegraph line from that city to a place named Faro, distant about 500 kiloms., following the course of the river where practicable. The Government is by this agreement to pay the company an annual subsidy of 10,000*l.* in addition to a considerable help in the initial construction of the line.

Railways.

There are at present no railways in the State, with the exception of the Manáos electric railway already mentioned. Several lines are projected however. One of the largest rivers in the State is the Madeira, which flows through a very valuable district. At a point near the frontier of the State there exist a series of waterfalls and rapids. Above this the river and its affluents are navigable for some distance. At present goods are sent up in canoes over the rapids at enormous expense and trouble. Rubber on its way down is often lost, owing to the capsizing of canoes in the rapids. It has been suggested, therefore, to build a railway to avoid the necessity of passing these waterfalls and thus to facilitate commerce with a large and valuable district. Since Colonel Church in 1872 made the first survey, several efforts have been made to carry out this project which, however, have not hitherto proved successful.

Madeira Mamoré Railway.

Rio Branco Railway.

A line has also been surveyed at considerable expense which would have as its object the connecting of Manáos with the cattle producing district on the Rio Branco. This has, however, not yet been carried out, and it is doubtful whether it would repay the expense incurred in building it.

Concluding remarks.

To sum up the foregoing remarks it may be stated that the State of Amazonas consists of a vast tract of forest-clad plain intersected by innumerable rivers and streams. That the district is populated by a small but very widely dispersed population, whose headquarters is Manáos, the capital of the State, a town situated at a comparatively short distance from the chief markets of the world. That the population is increasing in spite of the fact that the climatic conditions are unfavourable. The whole energies of this population being devoted to collecting rubber, should this for any reason cease to be a lucrative business, it is probable that the

* During the latter part of April, 1900, telegraphic communication was re-established between Pará and Manáos, and up to May 3, 1900, had not been interrupted.

commercial importance of the State will dwindle very much. That owing to the lack of local agriculture and manufactories there is a large demand for imports of all kinds, a demand which is steadily increasing, as shown by the receipts of the custom-house. That there is a good field here for individual enterprise, but that many difficulties are to be met with in establishing concerns working on a large scale. Finally, that the State is at the present very prosperous, and the average citizen well off.

List of Statistical Tables.

1. Showing the distances, freights, and first-class passages from Manáos to various points in the interior of the State.
2. Showing the distances from Manáos to the ultimate points to which various rivers are navigable.
3. Showing the distances from Manáos to various foreign ports.
4. Showing approximately the world's supply and consumption of rubber.
5. Showing the amount of, value of, and export tax on, the products exported from Manáos.
6. Showing the shipments of Brazil nuts from Manáos.
7. Showing the shipments of cacao from Manáos.
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9. Showing the total entries of rubber at Manáos.
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19. Meteorological table (temperature).
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Table 1.—SHOWING the Distances, Freights, and First Class Passages from Manáos to various Ports in the Interior.

Manáos to—	Distance (Approximate).	Freight (per Cubic Metre).	Passage.	River.
	Miles.	Reis.	Milreis.	
Borba	116	1,400	42	Madeira
Tabacal	194	2,000	57	
Manicoré	293	2,700	81	
Baeta	394	3,500	102	
Humaythá	537	4,200	125	
Sto. Antonio	697	5,300	163	
Boa Vista	347	2,400	73	Purús
Porto Alegre	611	4,500	128	
Labrea	811	5,600	167	
Hyutahanan	1,010	6,000	193	
	Days.			
Antimary	4*	8,000	339	Acre
Puerto Alonso	4½*	9,000	359	
Riosinho	6*	10,000	379	
Sta. Cruz	..	..	255	Alto Purús
Pauhiny	2*	7,200	259	
São José	15*	12,000	479	
Bocca do Yáco	10*	9,000	371	Yaco
São Sebastião	12*	11,200	419	
	Miles.			
Coary	239	2,500	41	Solimões (main stream)
Teffé	347	2,700	57	
Fonte Boa	486	3,100	81	
Tabatinga	826	4,100	130	
Loreto	889	4,800	143	
Iquitos	1,152	6,600	187	
Foz do Jurua	568	7,000	83	Jurua
	Days.			
Taruaca	16†	11,000	280	
Acuria	40†	19,000	692	
	Miles.			
Pedreira	174	1,500	57	Rio Negro
Barcellos	268	2,400	..	
Sta. Isabel	423	4,100	146	

* Steaming from Hyutahanan. † Steaming from Manáos.

NOTES.—1. By "days' steaming" is meant the time generally spent on the journey by a steamer, and includes the time spent at various ports of call.

2. Certain goods, such as farinha, xarque, and other bulky merchandise are carried at special rates. The freights quoted refer to "fine" goods.

3. For exchange, see Table 18, p. 41. 100 milreis = 3*l.* (about).

Table 2.—SHOWING the Distances from Manáos to the ultimate Ports on various Rivers.

Manáos to—	Distance.	River.
	Miles.	
Sto. Antonio	697	Madeira
	Days.	
Alto Acre	39*	Purús
Bocca do Breu	50*	Jurua
Ouro Preto	21*	Jutahy
Bocca do Jaquirana	20*	Javary
Pongo de Manseriche	24*	Solimões
Cámanáos	8*	Rio Negro
Boa Vista	10*	Rio Branco

* Steaming from Manáos.

NOTE.—The number of days includes those spent at various points called at during the voyage.

Table 3.—SHOWING the Distance from Manáos to various Ports Abroad.

Manáos to—	Distance.
	Miles.
Pará	860
Lisbon	4,149
Havre	4,905
Liverpool	5,149
New York	4,240

Table 4.—SHOWING the Total World's Supply and Consumption of Rubber, approximately.

PRODUCING COUNTRIES.

	Quantity.
	Tons.
Amazon district (Brazil, Peru, Bolivia)	25,000
Rest of South America	3,500
Central America and Mexico	2,500
Java, Borneo, and Eastern Archipelago	1,000
East and West Africa	24,000
Madagascar and Mauritius	1,000
India, Burmah, and Ceylon	500
Total	57,500

CONSUMPTION.

	Quantity.
	Tons.
United States and Canada	21,000
United Kingdom	21,000
Rest of Europe (excepting United Kingdom)	15,500
Total	57,500

Table 5.—SHOWING the Value and Amount of Produce Exported from the State of Amazonas during the Year 1897.

VIÂ PARÁ.

Produce.		Quantity.	Official Value.	Tax.
			Reis.	Per cent.
Fine rubber	Kilos. ..	3,317,311	26,884,810$609	21 and 8
Sernamby	„ ..	678,086·5	3,036,408 051	21 „ 8
Entrefine	„ ..	398,372	2,783,865 287	21 „ 8
Caucho	„ ..	540,695	1,958,833 010	21 „ 8
Dried fish	„	244,110	186,828 600	10 „ 8
Brazil nuts	Hectolitres	1,688·5	41,820 375	10 „ 8
Cacao	Kilos. ..	5,522	6,088 570	4
Balsam (cupahyba) ..	„ ..	1,591	5,359 000	10
Mixira (dried turtle) ..	Tins ..	434·5	5,204 000	10
Sarsaparilla (twigs) ..	Kilos. ..	1,324	4,637 500	10
Guaraná	„ ..	697	3,485 000	10
Cedar (boards)	„ ..	9,599	2,879 700	10
Sarsaparilla (roots) ..	„ ..	364	1,592 000	10
Deer skins	„ .	829	1,434 200	10
Lard (turtles')	„ ..	6,699	1,339 800	10
Jarina (vegetable ivory)..	„ ..	165	330 000	10
Piassava	„ ..	277	193 900	10
Tucum (fibre)	„ ..	35	105 000	10
Cumaru (beans) ..	„	35	52 500	10
Hides	„ ..	15	5 250	10
Total	..	..	34,925,272 352	..

DIRECT ABROAD.

Produce.		Quantity.	Official Value.	Tax.
			Reis.	Per cent.
Fine rubber	Kilos. ..	3,986,500	26,502,757$790	18½ and 8
Sernamby	„ ..	1,196,469	4,240,783 200	18½ „ 8
Entrefine	„ ..	946,129	3,164,543 930	18½ „ 8
Caucho	„ ..	759,035	2,992,551 800	18½ „ 8
Brazil nuts	Hectolitres	29,892	693,982 000	10
Piassava	Kilos. ..	135,904	112,490 900	10
Cacao	„ ..	48,929	55,877 864	4
Hides	„ ..	94,040	28,212 000	10
Balsam	„ ..	1,874	6,364 000	10
Sarsaparilla .. .	„ ..	147	606 900	10
Cumaru (beans).. ..	„ ..	43	64 500	10
Total	..	..	37,798,234 884	..

NOTE.—Value of total export during the year 1897, 2,200,000*l.* (about).

TABLE showing the Quantity and Value of Produce Exported from the State of Amazonas during the Year 1898.

I. DURING THE FIRST HALF-YEAR.

(*a*) Viâ Pará.

Produce.		Quantity.	Official Value.	Tax.
			Reis.	Per cent.
Fine rubber	Kilos. ..	2,087,222	18,467,306$955	21
Entrefine	„ ..	127,336	1,184,954 850	21
Sernamby	„ ..	628,868	3,108,544 632	21
Caucho	„ ..	650,706	2,320,001 275	21
Brazil nuts	Hectolitres	3,157	74,493 412	12
Dried fish	Kilos. ..	62,212	57,793 800	10
Cacao	„ ..	3,923	6,835 100	12
Sarsaparilla (twigs) ..	„ ..	1,541	5,260 250	10
Balsam (cupahyba) ..	„ ..	860	3,282 000	10
Sarsaparilla (roots) ..	„ ..	510	2,520 000	10
Cedar (boards)	Metres .	7,768	2,330 400	10
Deer skins	Kilos. ..	756	1,445 200	10
Piassava	„ ..	1,860	1,362 295	10
Mixira (dried turtle) ..	Tins ..	70	885 000	10
Pigs' skins	Kilos. ..	40	60 000	10
Skins	„ ..	7	10 500	10
Total	..	..	25,237,085 669	..

(*b*) Direct Abroad.

Produce.		Quantity.	Official Value.	Tax.
			Reis.	Per cent.
Fine rubber	Kilos. ..	2,160,885	23,725,536$190	18·5
Entrefine	„ ..	82,529	772,030 550	18·5
Sernamby	„ ..	703,440	5,079,563 040	18·5
Caucho..	„ ..	301,425	2,093,692 425	18·5
Brazil nuts	Hectolitres	52,045	1,091,241 780	10
Piassava	Kilos. ..	267,191	189,465 245	10
Cacao	„ ..	27,281	51,519 180	12
Hides	„ ..	100,725	30,217 500	10
Balsam	„ ..	4,748	18,759 600	10
Deer skins	„ ..	1,831	3,466 100	10
Birds' plumes	„ ..	12	2,500 000	10
Heron plumes	Grams ..	348	840 072	10
Guarana	Kilos. ..	324	777 600	12
Total	..	..	33,059,609 232	..

II. During the Second Half-Year.

(*a*) Viâ Pará.

Produce.		Quantity.	Official Value	Tax.
			Reis.	Per cent.
Fine rubber	Kilos. ..	1,090,074	10,874,351$807	21
Sernamby	„ ..	207,096	1,394,191 957	21
Caucho	„ ..	125.698	802,111 320	21
Dried fish	„ ..	165.929	130,864 410	10
Brazil nuts	Hectolitres	1,236	23,540 551	12
Balsam	Kilos. ..	2,844	12,536 800	10
Lard	„ ..	5,957	4,765 600	10
Sarsaparilla (twigs) ..	„ ..	1,183	2,841 800	10
Mixira (dried turtle) ..	Tins ..	133	2,394 000	10
Cacao	Kilos. ..	1,122	1,904 450	12
Guarana	„ ..	709	1,390 500	12
Sarsaparilla (roots) ..	„ ..	291	1,109 400	10
Hammocks	..	33	990 000	10
Deer skins	Kilos. ..	450	715 575	10
Piassava	„ ..	1,079	615 800	10
„	„ ..	297	594 000	10
Hides	„ ..	304	386 400	10
Oil (animal)	„ ..	830	362 000	10
„ (vegetable)	„ ..	15	3 000	10
Carajury (fruit)	„ ..	4·5	1 350	10
Total	..	..	13,255,670 720	..

(*b*) Direct Abroad.

Produce.		Quantity.	Official Value.	Tax.
			Reis.	Per cent.
Fine rubber	Kilos. ..	1,901,060	17,816,289$755	18·5
Sernamby	„ ..	415,378	2,598,611 005	18·5
Caucho	„ ..	131,480	804,932 600	18·5
Piassava	„ ..	194,478	111,158 600	10
Brazil nuts	Hectolitres	1,731	32,393 700	8
Cacao	Kilos. ..	17,377	28,349 300	12
Hides	„ ..	88,393	26,517 900	10
Plumes (herons') ..	Grams ..	13,124	16,019 824	10
Balsam	Kilos. ..	3,512	14,389 000	10
Deer skins	„ ..	1,812	2,953 402	10
Sarsaparilla (twigs) ..	„ ..	285	1,140 000	10
„ (roots) ..	„ ..	227	590 200	10
Cumaru	„ ..	183	366 000	10
Sheep skins	„ ..	159	270 000	10
Dried fish	„ ..	25	30 000	10
Total	..	..	21,454,011 286	..

Note.—Value of total export during the year 1898, 3,000,000*l.* (about).

TABLE showing the Quantity and Value of Produce Exported from the State of Amazonas during the Year 1899.

I. VIÂ PARÁ.

Produce.		Quantity.	Official Value.	Tax.	Duties Collected.
			Reis.	Per cent.	Reis.
Rubber (fine)	Kilos. ...	3,964,473	42,762,767$285	21	8,980,181$129
Sernamby	,, ...	1,065,047	8,806,414 185	21	1,849,346 978
Caucho	,, ...	584,700	4,013,943 490	21	842,928 132
Dried fish	,, ...	438,124	331,254 740	10	33,125 474
Mixira (dried turtle) ..	Tins ...	436	7,857 000	10	785 700
Sarsaparilla...	Kilos. ...	6,422	6,366 500	10	636 650
Balsam (cupahyba) ...	,, ...	3,776	15,350 350	10	1,535 035
Heron plumes	,, ...	16	11,160 000	10	1,116 000
Piassava	,, ...	5,121	2,560 500	10	256 050
Deer skins	,, ...	1,440	2,164 750	10	216 475
Hides	,, ...	18	29 700	10	2 970
Pig skins	,, ...	435	175 250	10	17 525
Lard	,, ...	1,400	1,120 000	10	112 000
Cedar wood boards ...	Metres ...	2,871	574 200	10	57 420
Lard (turtles')	Litres ...	1,732	378 400	10	37 840
Cumaru	Kilos. ...	40	80 000	10	8 000
Nuts (Brazil)	Hectolitres	2,416	54,359 675	12	6,523 161
Cacao	Kilos. ...	24,214	34,348 345	12	4,121 801
Guaraná	,, ...	350	2,100 000	2	252 000
Total	...	...	56,053,504 370	...	11,721,320 340

II. DIRECT ABROAD.

Produce.		Quantity.	Official Value.	Tax.	Duties Collected.
			Reis.	Per cent.	Reis.
Rubber	Kilos. ...	3,490,366	42,936,154$503	18	7,728,507$810
Sernamby	,, ...	1,342,801	11,145,546 920	18	2,006,198 445
Caucho	,, ...	778,341	5,314,227 230	18	956,560 901
Brazil nuts	Hectolitres	82,937	1,731,987 945	10	173,198 794
Brazil nut shells	Shells ...	10,190	2,038 000	10	203 800
Piassava	Kilos. ...	116,336	75,509 000	10	7,550 900
Hides	,, ...	174,422	52,326 600	10	5,232 660
Sheep skins...	,, ...	609	1,094 400	10	109 440
Balsam	,, ...	6,167	22,946 200	10	2,294 620
Heron plumes	,, ...	24	15,938 880	10	1,593 886
Cacao	,, ...	403,017	588,041 800	10	70,565 023
Cedar wood boards ...	Metres ...	38	7 600	10	760
Deer skins	Kilos. ...	3,154	5,027 700	...	502 770
Total	...	...	61,890,846 758	...	10,952,519 809

NOTE.—Total value of produce exported during the year 1899 = 3,500,000*l.* (about). Total value of revenue obtained therefrom = 700,000*l.* (about).

Table 6.—SHOWING the Export of Brazil Nuts from Manáos during the Years 1896–99.

Year.	Quantity.
	Hectolitres.
1896	68,672
1897	43,515
1898	54,078
1899	84,859

NOTE.—Export in 1899, 6,527 tons (about).

Table 7.—SHOWING the Export of Cacao from Manáos during the Years 1896–99.

Year.	Quantity.
	Tons.
1896	117
1897	77
1898	45
1899	423

Table 8.—SHOWING the Entries of Rubber and Caucho, in Tons, into Manáos, from each of the Rivers of the State of Amazonas. (In these Entries are included Rubber and Caucho coming from the Neighbouring Republics of Peru and Bolivia.)

TOTAL OF ENTRIES DURING CROP 1897–98.

Month.	River.							Total per Month.
	Solimões.	Purús.	Jurua.	Javary.	Madeira.	Negro.	Caucho.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1897.								
July	4	16	17	21	149	3	132	342
August	47	432	137	23	256	...	43	938
September	98	173	...	74	312	...	30	687
October	178	238	98	240	218	...	85	1,057
November	200	320	379	369	367	3	116	1,754
December	157	280	432	160	160	24	87	1,300
1898.								
January	39	1,200	992	223	245	85	248	3,032
February	66	589	111	130	157	31	343	1,427
March	65	306	70	87	380	50	198	1,156
April	39	109	80	15	109	26	222	600
May	24	154	33	43	4	7	262	527
June	4	3	6	...	174	25	150	362
Total	921	3,820	2,355	1,385	2,531	254	1,916	13,182

TABLE showing the Entries of Rubber and Caucho, in Tons, into Manáos, from each of the Rivers of the State of Amazonas. (In these Entries are included Rubber and Caucho coming from the Neighbouring Republics of Peru and Bolivia)—continued.

TOTAL OF ENTRIES DURING CROP 1898–99.

Month.	River.							Total per Month.
	Solimões.	Purús.	Juruá.	Javary.	Madeira.	Negro.	Caucho.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1898.								
July	4	152	15	49	164	8	198	590
August	27	315	83	11	317	...	45	798
September	51	247	...	90	320	...	30	738
October	135	...	116	189	273	9	59	781
November	98	272	105	283	191	55	57	1,061
December	248	173	484	447	250	100	160	1,862
1899.								
January	203	1,664	517	90	243	62	281	3,060
February	111	1,060	713	163	345	71	642	3,105
March	85	489	182	256	233	84	303	1,632
April	73	195	133	53	61	31	153	699
May	33	226	167	98	55	6	391	976
June	9	4	26	14	66	8	340	467
Total	1,077	4,797	2,541	1,743	2,518	434	2,659	15,769

TOTAL OF ENTRIES DURING CROP 1899–1900.

Month.	River.							Total per Month.
	Solimões.	Purús.	Juruá.	Javary.	Madeira.	Negro.	Caucho.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1899.								
July	5	153	5	46	88	2	164	463
August	20	366	33	6	281	4	31	741
September	65	267	11	11	267	...	10	631
October	131	315	182	147	297	1	54	1,127
November	163	217	164	295	166	24	97	1,126
December	174	278	328	76	294	82	68	1,300
1900.								
January	193	1,409	783	349	245	114	419	3,512
February	176	1,471	476	139	308	96	479	3,145
Total	927	4,476	1,982	1,069	1,946	323	1,322	12,045

Table No. 9.—SHOWING Total Entries of Rubber at Manáos.

Amount.	Quantity.
	Tons.
From July 1, 1893, to June 30, 1894 ..	10.488
„ 1894, „ 1895 ..	10,326
„ 1895, „ 1896 ..	12,182
„ 1896, „ 1897 ..	13,330
„ 1897, „ 1898 ..	13,173
„ 1898, „ 1899 ..	15,512
„ 1899, „ 1900 .	..*

* 15,500 to 16,000 tons expected to arrive.

Table 10.—SHOWING Yearly Exports of Rubber direct from Manáos to Europe and America.

Crop Year.	Quantity.		
	To Europe.	To United States.	Total.
	Tons.	Tons.	Tons.
1895-96	3,058	2,860	5,918
1896-97	4,043	2,634	6,677
1897-98	4,103	2,723	6,826
1898-99	4,670	2,372	7,042

TABLE showing Yearly Exports of Rubber direct from Pará to Europe and America.

Crop Year.	Quantity.		
	To Europe.	To United States	Total.
	Tons.	Tons.	Tons.
1895-96	7,108	7,944	15,052
1896-97	7,214	7,719	14,933
1897-98	8,699	7,931	16,630
1898-99	10,026	7,263	17,289

Table 11.—SHOWING the Revenue of the Custom-House at Manáos.

Year.	Amount.
	Reis.
1894	3,929,957$213
1895	3,809,332 458
1896	5,476,596 197
1897	6,605,251 551
1898	6,698,429 728
1899	8,484,850 201

NOTE.—Revenue in 1899, 240,000*l.* (about).

Table 12.—SHOWING the Revenue of the State of Amazonas during the Years 1888–1900.

Source of Revenue.	Amount.								
	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895–96.	1896–97.
	Reis.	Reis.	Reis.	Reis.	Reis.	Reis.	Reis	Reis.	Reis.
Export duties	1,410,618$095	1,310,096$577	1,407,611$217	3,754,773$898	5,470,614$818	7,534,119$404	7,910,096$686	10,023,062$03?	13,500,103$685
Inland revenue	78,469 703	74,829 930	119,724 539	281,259 196	296,124 265	513,998 763	620,846 383	492,711 877	593,919 626
Extraordinary revenue ...	235,440 673	114,252 181	210,390 221	233,762 945	32,801 3:6	138,015 992	277,809 451	312,839 109	325,103 218
Items to be specially applied	161,855 137	157,281 517	605,891 834	477,276 930	...	...	...	...	417,280 525
	1,886,383 608	1,656,460 205	2,343,617 810	4,747,072 969	5,799,540 439	8,186,124 159	8,808,752 520	10,828,613 018	14,836,407 054
Deposits	233,905 441	252,714 804	192,955 539	449,476 153	623,228 729	3,076,036 761	1,693,022 424	2,015,702 980	2.524,517 325
Pension fund	7,234 366	...	70,787 334	237,808 436	39,812 377	44,720 789	81,168 881	93,309 367	95,523 247
	2,127,523 415	1,909,175 009	2,607,360 683	5,434,357 558	6,462,581 545	11,306,881 709	10,582,943 325	12,937,625 365	17,456,447 626
Loans	...	...	...	...	...	...	630,000 000	604,662 750	...
Sale of stocks and shares ...	977,873 103	1,402,120 791	963,232 440	555,293 871	345,078 631	2,684,332 430	1,103,743 193	38,982 579	660,247 455
Total	3,105,396 518	3,311,295 800	3,570,593 123	5,989,651 429	6,807,660 176	13,991,214 139	12,316,686 518	13,581,270 694	18,116,695 081

Source of Revenue.	Amount.		
	1898.	1899.	1900.*
	Reis.	Reis.	Milreis.
Export duties	19,349,571$400	22,845,628$600	17,000,000
Inland revenue	828,306 101	1,131,404 200	861,000
Extraordinary	149,397 370	...	150,000
Various sources—			
	450,399 266	324,347 000	500,000
	55,288 405	...	...
	1,426,313 288	494,652 700	...
Total	22,259,275 830	24,796,032 500	18,511,000

* Estimated revenue.

NOTE.—The revenue during 1899 = 750,000*l.* (about).

Table 13.—RETURN of British and United States Shipping, including only Vessels that began or ended the Voyage at Manáos during the Year 1899.

Country.	Entered.		Cleared.	
	Number of Vessels.	Tonnage	Number of Vessels.	Tonnage.
United Kingdom ..	53	78,932	48	73,003
United States	19	25,665	21	31,108
Total	72	104,597	69	104,111

Table 14.—RETURN of Steamers Entered at Manáos during the Year 1898.

From—	Brazilian.		Foreign.	
	Number of Vessels.	Tons.	Number of Vessels.	Tons.
Interior of the State ..	646	91,079	..	..
Brazilian ports.. ..	271	181,600	..	..
Liverpool	..	..	59	86,670
New York	..	..	18	21,799
Genoa	..	..	10	20,608
Iquitos (Peru)	..	..	9	5,996

Table 15.—SHOWING Particulars relating to the Telephone Company at Manáos.

Name of Company.	Capital.	Number of Installations.			Amount of Subscriptions.	Number of Subscribers.	Number of Staff.
		In Public Offices.	In Private Houses.	Total.			
	Milreis.				Milreis.		
Empresa Telephonica Manáos	220,000	47	168	215	57,680	215	8

Table 16.—SHOWING Particulars regarding the Electric Light Company at Manáos.

Horse-Power of Engine.	Tons of Coal per Night.	Tons of Coal per Half-Year.	Number of Lamps.	Voltage per Lamp.	Staff.				
					Manager.	Engineer.	Workmen.	Superintendent Engineers.	Firemen.
500	4	730	750	2:00	1	1	13	2	2

Table 17.—SHOWING Emigration from Ceará to the Amazon Valley during the Years 1892–99.

Year.	Number.
1892	7,389
1893	4,443
1894	9,092
1895	9,686
1896	7,312
1897	17,426
1898 .. .. .. (about)	13,000
1899 .. .. .. (about)	30,000

Table 18.—SHOWING the Extreme Rates of Exchange per Milreis on London for the Years 1888–99, at Manáos.

Year.	Rate per Milreis.	
	From—	To—
	d.	*d.*
1888	22$\frac{1}{8}$	27$\frac{9}{16}$
1889	26$\frac{7}{8}$	28$\frac{1}{8}$
1890	26$\frac{1}{8}$	20$\frac{3}{8}$
1891	10$\frac{3}{4}$	21$\frac{1}{8}$
1892	10$\frac{1}{8}$	16$\frac{1}{8}$
1893	10$\frac{13}{16}$	16$\frac{1}{4}$
1894	9$\frac{1}{16}$	13
1895	9	11$\frac{3}{4}$
1896	7	10$\frac{1}{8}$
1897	6$\frac{15}{16}$	9$\frac{1}{16}$
1898	5$\frac{11}{16}$	9$\frac{1}{32}$
1899	6$\frac{3}{4}$	8$\frac{1}{8}$

Table 19.—SHOWING the Temperature at Manáos during the Year 1898.

	Degrees Fahrenheit.
Mean temperature:—	
At 7 A.M.	76
„ 2 P.M.	84
„ 9 P.M.	79
Mean maximum	86
„ minimum	73
Maximum recorded (September 2 and November 16) ..	102
Minimum recorded (July 6)	69

Table 20.—List of Rubber Exporters established at Manáos showing the Amounts Exported by each Firm to the United States and Europe during the Year 1899.

Exporters.	Europe.					United States.					Total Exportation.	Stock on December 31, 1899.
	Fine.	Entrefine.	Sernamby.	Caucho.	Total.	Fine.	Entrefine.	Sernamby.	Caucho.	Total.		
	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Tons.
Prusse, Pusinelli and Co.	460,979	106,134	97,244	95,748	760,105	632,629	146,364	240,052	110,178	1,129,223	1,889,328	90
Witt and Co.	288,755	60,105	75,455	88,318	512,633	364,498	80,604	122,368	96,346	663,814	1,176,447	70
Marius and Levy	296,631	52,418	177,353	413,434	939,839	6,025	1,985	9,955	12,228	30,193	970,032	45
Rud. Zietz	335,986	67,290	83,867	18,721	505,864	54,612	9,150	16,400	31,849	112,011	617,875	15
J. H. Andresen, successores ...	186,597	36,611	61,179	29,188	313,575	12,960	3,840	3,850	1,588	22,238	335,813	6
Mello and Co.	198,240	25,440	30,233	14,480	268,393	33,760	4,320	5,880	6,976	50,936	319,329	5
Lajeunesse and Co	43,575	3,527	25,962	152,567	225,631	...	...	...	42,931	42,931	268,562	...
Adelbert H. Alden	...	...	...	...	...	164,320	38,560	41,700	1,373	245,953	245,953	18
Kahn, Polack and Co.	120,672	28,950	44,277	7,281	201,180	...	...	...	...	...	201,180	...
B. A. Antunes and Co.	111,010	23,800	25,242	937	160,989	17,340	3,230	2,942	6,661	30,173	191,162	4
Luiz Schill and Sobrinhos... ...	93,860	20,570	32,277	2,060	148,767	...	...	...	...	...	148,767	7
J. A. de Freitas	68,087	14,363	13,800	...	96,250	25,840	6,290	5,750	...	35,880	132,130	...
Brocklehurst and Co.	...	...	...	4,582	4,582	56,454	8,695	13,897	2,227	81,273	85,855	12
Sears and Co.	...	...	...	...	...	54,230	10,690	12,652	454	78,026	78,026	...
A. F. Monteiro da Silva	26,840	5,950	9,146	...	41,936	...	...	...	...	...	41,936	...
Pereira Junior and Co.	8,330	2,550	7,580	...	18,410	13,724	1,700	5,478	376	21,278	39,688	...
Various shippers	74,340	13,819	18,561	780	107,500	74,560	15,394	11,346	5,812	107,112	214,612	176
Directly from Iquitos	276,425	16,268	286,512	317,224	896,429	...	...	...	...	...	896,429	...
Total	2,590,330	477,795	988,638	1,145,320	5,202,083	1,508,952	330,822	492,268	318,999	2,651,041	7,853,124	448

Notes on the Tables.

For the foregoing tables I am indebted to the Inspector of Customs at Manáos, the Director of the Recebedorea of the State, the Secretary of State for the Interior, the Financial Secretary, the Associação Commercial, the Amazon Steamship Company, and various merchants resident at Manáos, who have kindly assisted me with information. That more accurate information as regards the internal economy of the State is not available is regrettable, but the difficulty in compiling statistics in such a scantily populated and newly settled district is very great. The Secretary of State for the Interior informs me, however, that before the end of the year 1900 a very complete census will have been made. Those statistics that are here given must be taken as only approximate; indeed, a comparison will often show discrepancies between various tables, discrepancies which, however, are almost unavoidable in compiling statistics in this country owing to the insufficient data available.

Addendum.

Although the total production of rubber in the State has slightly increased during the crop year 1899–1900, I am informed by several persons well acquainted with the business that such increase is not at all in proportion to the consignments of goods sent up country, which have been very much larger during the past season than during former seasons. This would appear to bear out what I have previously stated, that it is not so much capital, or opportunities for the employment of capital, that are lacking in this district but labour by which both may be turned to account.

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FRANCE.

REPORT ON

FRENCH COLONIES.

Presented to both Houses of Parliament by Command of Her Majesty,
JANUARY, 1900.

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Report on French Colonies by Mr. Austin Lee.

(Received at Foreign Office, December 1, 1899.)

Introductory remarks.

The expansion which has taken place in its Colonial Empire is, perhaps, one of the most notable features of the recent history of France. The historical view of this expansion does not enter into the scheme of a report destined to deal, as far as possible, with the present economic situation of most of the French possessions and their relations in this respect with the United Kingdom. It may, however, be briefly stated that before the Franco-German war, though a nominal suzerainty existed over some of the colonies of to-day, those actually under French rule were:—The French West Indies, French Guiana, St. Pierre and Miquelon, Senegal and certain factories and towns together with somewhat ill-defined spheres of influence, and the port of Obock in Africa, the French Possessions in India and Cambodia in Asia, and New Caledonia with a few scattered islands in Oceania. Algeria is excluded as it practically forms an integral part of the French State.

Area and population.

It is almost impossible to state precisely what were the area and population in 1870–71 of the territories under French control. In the report on the 1897 Colonial Budget the former was estimated at 2,981,900 square kiloms., whilst the latter was reckoned at 32,083,273 inhabitants. Nevertheless these figures can probably only be regarded as approximative.

Political and administrative divisions.

The Report on the 1897 Budget for the Chamber of Deputies divides the French colonies both politically and administratively into three distinct groups as follows:—

I. Colonies under the "Senatus Consultum" of 1866, viz.:—Martinique, Guadaloupe, and Réunion.

These three colonies date back to an earlier period of French colonisation. They are each represented in the Senate and Chamber respectively by one Senator and two Deputies. A considerable party favours their complete assimilation and absorption, similarly to what has taken place in the case of Algeria. Local opinion does not, however, appear to be quite unanimous on the subject.

II. Colonies under the régime of Decrees, viz.:—Senegal, French

Guiana, French Possessions in India, St. Pierre and Miquelon, Cochin-China, New Caledonia, Tahiti.

Of these the French possessions in India are represented in the Parliament of the mother country by a Senator and a Deputy, whilst Senegal, French Guiana, and Cochin-China each send a single Deputy. The remainder are represented in the "Conseil Supérieur des Colonies," a body which includes, besides the delegates of the colonies, a number of official and other notabilities connected with the colonies administratively or otherwise.

III. Protectorates and colonies under French suzerainty, viz.:—French Sudan, French Guinea, Ivory Coast, Dahomey, French Congo, French Somaliland, Mayotte, Madagascar, Tonkin, Cambodia.

A certain number of these are also represented in the "Conseil Supérieur des Colonies," but others are still to a greater or less extent under military rule.*

Local self-government. Though nothing in any way approaching actual autonomy has until now existed in the organisation of any French colony, all, with the exception of a few in the third category, possess a share of local self-government under the restrictive influence of the Ministry of Colonies and the Governor-General, Governor or Lieutenant-Governor. These local powers vary according to the case, and appear to be organised somewhat on the same principles as those followed in the organisation of French departments.

Central administration. With regard to the central administration it may be remarked that it has passed through a number of different phases. Up to 1858 it formed a department in the Ministry of Marine, in which year a separate and distinct "Department of Algeria and the Colonies" was organised. In 1860 the administration again came under the Ministry of Marine. In 1881 it was attached to the Ministry of Commerce in the form of an Under-Secretaryship of State. In 1882 it was again re-transferred to the Ministry of Marine. From that period until 1889, with the exception of two short intervals in 1882–83 and 1885–86 when it was confided to "Directors," it remained in the hands of an Under-Secretary of State attached to the Ministry of Marine. In 1889 the colonial administration was transferred to the Ministry of Commerce and Industry. For a few months in 1893 it once more returned to the Ministry of Marine, and finally in 1894 it was organised as a distinct Ministry.

Centralisation. The policy of centralisation, which has been perhaps a rather marked feature in French governmental methods, seems up to the present to have been carried to a high pitch as regards the colonies. Monsieur Jules Siegfried, the author of the report for the Chamber of Deputies of the Committee charged with the examination of the colonial estimates for 1897, remarked that the number of officials at the Ministry of Colonies was 231 (costing 820,000 fr.), as against 79 (costing 902,000 fr.) at the British Colonial Office.

* Madagascar has, as shown hereafter, been declared French territory, and the Sudan entirely re-distributed.

This great difference as regards numbers is, of course, due to the fact that the Ministry of Colonies is obliged to deal with a far greater variety of subjects than our own Colonial Office, but M. Siegfried pointed out that the former is inclined to retain in its own hands a quantity of minor matters which, in his opinion, might with advantage be left to the discretion of the local authorities. A further point upon which he laid a good deal of stress was the question of the "Service Central des Marchés," which makes all purchases for account of the colonies. This he characterised not only as excessive, but as expensive centralisation, the cost of the goods purchased being augmented by about 6 per cent. in consequence of the methods adopted. His opinion seems to have been borne out by the action of subsequent Committees which have gradually reduced the Vote for this purpose.

"Service Central des Marchés."

A useful institution denominated the "Office Colonial" was organised at the beginning of the present year for supplying information on all subjects relating to the colonies. This establishment, which, though under, is practically distinct from the Ministry of Colonies, serves as an Emigrants' Information office and as a permanent sample Museum both of colonial products and of home manufactures suitable for exportation to the various colonies. It also possesses a library of works of reference, to which the public have access, and publishes an official journal dealing with colonial matters.

"Office Colonial."

As may be supposed, the acquisition of such vast territories as those now under French dominion has not been accomplished without very serious financial sacrifices.

Annual estimates.

Broadly speaking the general annual estimates of the Ministry of Colonies have until now been intended to cover the colonial military expenditure* and the so-called "expenses of sovereignty." These include mainly the expenditure on the salaries of governors, on the administration of justice, on religion, and on the Treasury service, though a considerable part of the cost of the last three is borne by the local budgets. Further the home Government intervenes in local financial matters by granting subsidies where the local revenue is insufficient to meet the expenditure. Though the colonial military expenditure has formed the chief item of late years in these estimates a certain proportion seems not to be included in the annual Colonial Budget, but in those of the Ministries of War and Marine. It is, consequently, impossible to arrive at the actual annual expenditure under this head. As an instance, however, it may be mentioned that the expenditure of these two Ministries on behalf of Madagascar from the end of 1894 up to the end of 1896 amounted to over 3,500,000*l.* sterling. The total expenditure on the Conquest of the Island,

Expenditure on Madagascar.

* In the Ivory Coast, French Congo, Dahomey and Madagascar there exist bodies of local militia, the cost of which appears in the various local budgets. Except in the last case, these troops appear to perform functions akin to those of police.

the maintenance of French supremacy, &c., may probably be taken at nearly 7,000,000*l.* sterling.

Total expenditure, 1890–99.

The following table shows the total annual amounts (under the head of "Colonial Budget") expended by the various departments which have administered the colonies during the last nine years, together with the amount voted for the present year :—

FRENCH Colonial Expenditure,* 1890–99.

Year.	Amount.
	£
1890	2,338,540
1891	2,843,627
1892	3,423,112
1893	3,221,630
1894	3,413,940
1895	3,434,414
1896	3,117,052
1897	3,629,051
1898	3,866,065†
1899‡	3,595,832§
Total	32,883,263

* The exchange here, as throughout, is taken at 25 fr. 25 c. to the 1*l.*

† Approximate.

‡ The estimates for 1900 amount to 3,555,178*l.*

§ The expenditure on penal settlements in these estimates stands at 360,518*l.* During the preceding nine years the cost of these establishments was, probably, slightly higher.

The above amounts do not include either postal subsidies or those granted to lines of steamers for calls, such expenditure not appearing in the Colonial Budget.

Average expenditure.

The average expenditure is about 3,200,000*l.* sterling per annum. During practically the whole period the military expenses absorb a great part of the sums voted, indeed, in the vote for 1899 they are responsible for rather more than two-thirds of the whole. It may be noted that these annual votes do not include the special expenditure for colonial purposes of the Ministries of War and Marine on the Madagascar and other expeditions, which would doubtless bring the average up to a considerably higher figure.‖

Revenue from colonies.

The credit side of the account shows receipts, under various heads, from the colonies which, in round numbers, may be taken at a total of about 2,500,000*l.* sterling during the decade under consideration. These receipts in most cases take the form of contributions, on the part of the individual colonies, towards the military and other expenditure of the mother country. The policy which dictates the payment of these sums is severely condemned by the author of the Report on the Colonial Budget for the present year. He maintains that even if the charges were raised to a much higher figure than that at which they at present stand, so as to cover the whole of the home expenditure purely for the benefit of the colonies, the system on which they rest would still be a bad one. He bases this

‖ For further information on this point see Appendix.

view on the fact that the colonists would be unable to control the expenditure of the sums which they have paid, whilst the French public would find it impossible to trace the gradual diminution of the estimates to its true cause.

Future diminution of receipts.

For the future, however, these annual receipts will fall off very considerably. This diminution will be consequent upon the transfer to the General Budget of Indo-China, which will henceforth bear the whole cost of the local native troops amounting to nearly 180,000*l.* sterling, formerly paid by Cochin-China, and to the reforms mentioned below.

As will be observed from the above table, the estimates for 1899 show a considerable decrease as compared with the total expenditure during 1898. Part of this diminution is naturally attributable to the circumstances mentioned with regard to Indo-China. It remains, however, to be seen whether, in view of past experience, the sum voted for the current year will be sufficient. The writer of the report on the Budget admits that the falling-off is more apparent than real, and unofficial writers, whilst enquiring when the continuous and heavy expenditure will cease, seem to view such a possibility, as far as the immediate future is concerned, in rather a sceptical spirit.

Local expenditure.

Whilst the home expenditure undoubtedly forms a somewhat heavy charge, the local administrative expenses seem, in many cases, to be proportionately even heavier. The local estimates for 1898 are, throughout the individual notices of most of the colonies which follow, given in the text. It may, however, be remarked that over and above the expenditure of each colony as a whole, further considerable sums are often laid out by its component "arrondissements" and "communes."

Report of the Local Budget Committee.

On January 30 of the present year a Committee was appointed to enquire into the financial and budgetary conditions obtaining in French colonies. Its report was published on July 28, in the "Journal Officiel."

The main object of the Committee was to arrive at a feasible plan, by which the so-called "expenses of sovereignty" might be transferred from the national to the individual Local Budgets.

The general drift of the report is towards the substitution of the principle of greater local responsibility and, within certain bounds, of greater local autonomy, for the idea of assimilation which, until now, has played a foremost part in French colonial policy. The Committee reviews the general situation as regards financial and fiscal matters. It points out that the total revenue of all the colonies is equivalent to a per capita tax of 3 fr. 55 c. on the whole colonial population, whilst the taxation in the mother country, exclusive of departmental and communal rates, amounts to 90 fr. per head; further, that of the whole cost of the colonies, no less than 44 per cent. is borne by the French taxpayer. No little stress is laid upon the local administrative expenses, which attain 1 fr. 13 c., whilst those in the mother country only reach 23 c. per head of the population. It is remarked "that the

resources of our colonies are not judiciously utilised, that the unproductive expenses are the most numerous." The administrations of Justice, the Treasury Service, Public Instruction, the Post Office, Customs, &c., are cited as cases in point.

Reforms recommended.

The reforms* proposed by the Committee are embodied in three recommendations. The last two may be said to be more or less of the nature of ordinances intended to facilitate the carrying out of the first, which runs as follows :—

"All the civil and police expenditure is in principle supported by the Local Budgets of the colonies. Subsidies may be granted to the colonies from the Home Budget. Contributions may be levied from each colony up to the amount of its military expenditure."

It is proposed to allow the military expenditure to remain provisionally chargeable on the Home Budget, and for various reasons the studies of the Committee were confined to 10 colonies, which in turn were sub-divided into two distinct groups :—

I. Colonies in which the proposed reforms can be introduced immediately : Senegal, French Guiana, Réunion.

II. Colonies in which they can be effected in the nearer or more distant future: Mayotte, French Possessions in India, Martinique, Guadaloupe, St. Pierre and Miquelon, Tahiti, New Caledonia.

The total amount from which the Home Colonial Budget could be relieved under the new rule is 395,080*l.*, but for nine out of these ten colonies (French India, owing to special circumstances, being excepted from the calculation), the economy to be realised reaches the sum of 193,222*l.* Against this, however, must be set, firstly, the subsidies to be granted, amounting to 121,782*l.*, and the contributions of the colonies towards the home military and civil expenditure valued at 26,704*l.*, which are to be discontinued. These two amounts give a total of 148,486*l.*, thus reducing the net economy to 44,736*l.* It must, however, be borne in mind that the subsidies, which will be granted with a view to assisting the colonies to meet the new sources of local expenditure, will be gradually decreased until each colony, as far as local matters are concerned, is practically self-supporting.

The final paragraph, as showing the spirit which governed the Committee in its labours, may be quoted in extenso :—

"The reform, of which we have indicated the essential details, is modest. It is not, nevertheless, without importance in that it indicates the abandonment of the old official methods, and the adhesion to the doctrine of autonomy. The colonies will, perhaps, only see the financial side, and the increased expenditure which it will occasion. But their patriotism will not refuse to take an equitable share in the charges which weigh upon the mother country. They will find in the new legislation an encouragement to develop their individuality and consolidate their finances. When, by their administrative wisdom and their financial adroit-

* These reforms have been approved by the 1900 Budget Committee of the Chamber of Deputies. They will, however, only come into force on January 1, 1901.

ness, they have shown themselves capable of living under a less strict control, the Government of the Republic will, of itself, know how to relax its guardianship and facilitate the full development of local liberties."

By the Decree of November 20, 1882, it was ordained that a reserve fund should be formed in the various colonies from, in each case, the eventual annual surplus of local revenue. These funds can only be drawn upon for extraordinary expenditure caused by unforeseen events, or to cover an actual deficit in the local budget.

The following table shows the maximum amount to be attained by the reserve fund of each colony, and the sums at present in hand according to the Report for the Chamber of Deputies on the French Colonial Budget for 1900:—

Colonies.	Maximum of Reserve Fund.	Present Amount in Hand.
	Francs.	Francs.
Martinique	1,500,000	447,154
Guadaloupe	1,500,000	80,048
Réunion	1,500,000	491,095
French Guiana	1,000,000	1,127,649
Senegal	1,300,000	1,300,000
Gaboon	500,000	..
St. Pierre and Miquelon ..	400,000	117,454
Tahiti	400,000	97,230
New Caledonia	400,000	449
French possessions in India ..	1,000,000	190,265
Cochin-China	9,000,000	..
French Sudan	..	..
French Guinea	..	400,000
Ivory Coast	..	200,000
Dahomey	..	..
French Congo	..	317,163
Cambodia	..	2,446,538
Annam	..	211,469
Tonkin	..	300,000
Madagascar	..	1,109,290

"Octroi-de-mer."

A rather interesting point with regard to the fiscal arrangements in French colonies is found in the "octroi de mer." As a general rule the land tax cannot be said to exist. Prior to the liberation of the slaves in 1848, the landholders in the older colonies were subject to a *per capita* tax on the number of slaves owned. This was replaced by the system of export dues on colonial products, which still exists. In many cases, however, such duties do not enable individual municipalities and communes to cover their expenditure. With a view to making good the deficit, the right on the part of the local authorities to levy the so-called "octroi de mer" was instituted in different colonies at different periods. It is a tax applicable both to imports and to local* pro-

* Decision of the "Conseil d'Etat," July 3, 1894. See "Organisation des Colonies Françaises" (Petit), Vol. II., pp. 582-84.

ducts. The classes of goods taxed and the amount levied thereon vary greatly in the different colonies. The essential feature is, however, that since it is a purely local tax, raised for municipal and communal purposes only, it has no preferential effect in favour of the mother country's productions.

Capital for public works.

Whilst speaking of financial and kindred matters, it may perhaps be well to mention that the question of capital is one of the greatest difficulties with which French colonies have to cope. In fact it seems to be almost impossible for them to obtain the funds needed for various public works, such as roads, railways, ports, &c., which are absolutely necessary for the development of the natural wealth which many amongst them undoubtedly possess. Capital is said to be plentiful in France, but the confidence of the lending public does not, as yet, appear to have extended itself to undertakings in these trans-oceanic possessions. The guarantee of the home Government for loans of this description is, as a general rule, looked upon as a *sine qua non*, and this naturally is not always forthcoming, whilst in certain cases, where it has been granted to private companies carrying out public works on a large scale, the results have been anything but satisfactory. The French Government rarely undertakes public works on its own account in the colonies, it being understood that only those of general utility, in contradistinction to those for the benefit of a single colony, form part of its province. These two facts may perhaps be viewed as an unfortunate, though most natural, hindrance to the progress of some of the richest territories.

Scarcity of colonists and of labour.

The question of colonisation is difficult to handle by reason of the many essential differences which exist amongst the component parts of so large a dominion. A more or less acute labour question seems to reign in the majority of French colonies. Native labour, where available, is not always satisfactory. On the other hand, in only three colonies, for climatic reasons, can European colonisation in the sense of settling be regarded as possible. New Caledonia, the highlands of Madagascar, and Tahiti offer certain attractions in this respect, though the former is by far the best adapted to the purpose. The larger portion of the French colonial empire is, therefore, susceptible of commercial rather than strictly colonial development by the introduction of a permanent white population. A writer in the "Journal des Chambres de Commerce" criticises the action of the Colonial Budget Committee of the Chamber in reducing this year the vote for the assisted emigration of labourers from 75,000 to 70,000 fr. He asserts that practically nothing is done by the Home Government towards the peopling of French colonies by French citizens.

Vote for assisted emigration.

Emigration, 1894-96.

It is, however, only just to observe that a recent number of the "Revue de la Statistique" shows that during the years 1894, 1895, and 1896 the total annual number of emigrants from France was only 5,000. This extremely small figure serves to bear out the impression conveyed by certain passages in M. Paul Leroy-Beaulieu's remarkable work, "La Colonisation chez les Peuples

Modernes." From various remarks which he makes it may be gathered that the French, whilst most intrepid as explorers, &c., do not, as a rule, possess the peculiar bent of mind which would lead them to cross the seas with a view to permanent residence abroad. The causes of this more or less national characteristic lie far too deep to be discussed in a few lines, but they are of such a nature as to justify the supposition that the populating of those portions of the colonial empire which are suited to European immigration is likely to progress slowly.

Commercial relations.

As regards commercial relations, the basis of the idea of development which the most important section of those interested in colonial affairs have formed, appears to be that the colonies should, as far as possible, provide the mother country with those commodities which she cannot produce, whilst reserving to her the monopoly of their markets for manufactured goods. If the protectionist principles now held in France be borne in mind, the desire to exclude foreign manufactures is not unnatural. Nevertheless, as local enterprise, here and there, begins to show itself, the theory is pushed yet further. M. Jules Meline, in a speech made at the annual meeting of the "Association de l'Industrie et de l'Agriculture françaises," sounded a serious note of warning on the subject. After speaking of the difficulty of finding an adequate solution, he gave his views in the following words: "I see only one means of accomplishing it, which would be to impose upon industrial undertakings which may attempt to establish themselves in our colonies a tax sufficient to re-establish the equality in production between them and the French establishments in the mother country." His words have found their echo in a number of publications in the form of more or less distinct demands for repressive measures against any industries in French possessions which would interfere with French exports thereto.

French monopoly desired.

Proposed taxation of local industries.

As an annex to the general report on the 1896 Budget for the Chamber of Deputies an interesting and exhaustive report, dealing with the economic situation of French colonies, was published in 1895.

Economic situation, 1895.

This work showed that the general state of trade in the colonies was then by no means favourable to French commerce; to quote verbatim: "A market worth 95,000,000 fr. costs us 80,000,000 fr. a year; foreign countries have a market worth 126,000,000 fr. without loosening their purse-strings." In view of these circumstances the author of the report advocated further tariff legislation, a course which, in many cases, has been pursued. In addition, however, to proposing this action on the part of the State, he remarked that the general run of French merchandise was not suited to the colonial market—especially as regarded the West African possessions—cheapness rather than finish being the chief requisite. Producers, he emphasised, must learn to accommodate themselves to the tastes of consumers. How far this frequently reiterated advice has been followed it is impossible to ascertain accurately. The latest fairly complete trade statistics, those for 1897, are quoted in the text below, and are included, together

with those for other years, in Tables I and II. From them it would appear that the injunction has produced a certain amount of effect.

Value of imports, 1888 and 1897.

The total value of imports into French colonies, exclusive, of course, of Algeria and Tunis, in 1888 was 7,837,076*l.*, the proportions attributable to the trade with France and French colonies and to that with foreign countries being respectively 2,880,497*l.* and 4,956,579*l.* In 1897, as far as the figures go, out of a total value of 9,810,216*l.*, the imports from France and other colonies were worth 4,696,172*l.*, and those from foreign countries amounted to 5,114,044*l.* These figures for 1897 do not, however, include the value of imports into French Congo, Mayotte, and the French possessions in India which, in 1896, were collectively worth 95,534*l.* as regards France and French colonies, and 240,381*l.* in respect of other countries. Assuming, therefore, that the imports of these three colonies increased slightly during the year, it will be found that the total figures for 1897 stood, in round numbers, as follows :—

Increased importation from France.

France and French colonies, 4,792,000*l.*, other countries, 5,355,000*l.*, showing a balance in favour of the latter of 563,000*l.*, as compared to, in 1888, a difference on the same side of 2,076,082*l.* It will also be noted that, during the 10 years the total value of imports from all sources had increased by, approximately, 2,310,000*l.*, the increase being almost entirely in favour of the trade with the mother country since the inter-colonial trade is comparatively small. In considering this important increase it must, however, not be neglected that it is probably due quite as much to expansion and tariff legislation as to development.

Lack of official French data regarding British trade during same period.

It is unfortunate that no official figures exist enabling a similar comparison to be made in the case of imports from the United Kingdom in particular. The only detailed statistics, showing the origin of imports and the classes of goods imported, are those for 1896. Table III serves to show them as a whole, arranged according to the French classification of merchandise, whilst the values of imports from the United Kingdom are individually introduced into the text.

Value of exports, 1888 and 1897.

The total value of exports from French colonies in 1888 was 8,238,776*l.*, divided into : Exports to France and French colonies, 4,134,459*l.*, and to other countries, 4,104,317*l.* In 1897, the value, according to the official figures, was 9,393,044*l.*, the share of France and French colonies standing at 4,115,181*l.*, and that of foreign countries at 5,277,863*l.* In this case, also, the figures for the above-mentioned colonies are missing. Their collective exports in 1896 to France and French colonies were valued at 198,771*l.*, whilst foreign countries received from them merchandise to the value of 308,017*l.* On following the same method as that adopted in the case of imports it will be found the value of exports in 1897 probably stood in round numbers at about 4,314,000*l.* to France and other colonies, and at 5,586,000*l.* to other countries, according to which the latter exceeded the former by the large sum of 1,272,000*l.*

It is also a noticeable fact that the total increase in the value of exports, which amounted to about 1,661,000*l.* during the 10 years, was almost entirely in favour of the trade with foreign countries, that with France and French colonies remaining almost stationary. Increase of exports to foreign countries.

The foregoing remarks with regard to imports from the United Kingdom are equally applicable to exports thereto, for which Table IV. shows the corresponding figures.

To sum up, it may be said that the trade of French colonies shows a decided increase on the import side and a somewhat less marked increase on the export side. Further that, owing mainly to the fostering effect of protective tariffs, the imports from the mother country have gained largely, whilst, on the contrary, the exports to France have not progressed to any appreciable extent.

The following table will be found to summarise the trade of French colonies for the years 1888 and 1897 and to show the increase thereof with France and her colonies and with foreign countries respectively :— Summary of French colonial trade.

	France and French Colonies.			Foreign Countries.			Total Increase of Trade.
	1888.	1897.	Increase.	1888.	1897.	Increase.	
	£	£	£	£	£	£	£
Imports	2,880,497	4,792,000	1,911,503	4,956,579	5,355,000	398,421	2,309,924
Exports	4,134,459	4,314,000	179,541	4,104,317	5,586,000	1,481,683	1,661,224
Total	7,014,956	9,106,000	2,091,044	9,060,896	10,941,000	1,880,104	3,971,148

In virtue of the Senatus Consultum of 1866, the Conseils Généraux of Martinique, Guadaloupe, and Réunion were authorised to legislate individually in the matter of customs tariffs. As a consequence of this authorisation, in the course of the five or six succeeding years they embraced free trade principles. This state of affairs lasted from 15 to 18 years, finally giving way to the complaints made by French manufacturers and merchants. At present, French colonies may be divided into two distinct groups as regards the tariff question. To the first belong Martinique, Guadaloupe, French Guiana, St. Pierre and Miquelon, the portion of French Congo known as the Gaboon, Réunion, Mayotte, Madagascar, Indo-China, and New Caledonia. Under the law of January 11, 1892, these colonies are, in general, subject to the ordinary French tariff, though in most cases certain special classes of goods pay special rates or are admitted free of duty. The remaining colonies possess special individual tariffs. Goods of French origin are admitted into the colonies free of customs duty, but are subject to the same local taxes, such as *octroi-de-mer*, &c., as are levied on foreign produce (see Blue Book, Commercial No. 5, 1895). Inter-colonial trade is free for French products or those of French colonies. Customs tariffs.

It is interesting to note that some amongst the most important colonial exports are not admitted free of duty in France, though they are exceptions to the general rule. Amongst these may be Duties on colonial products imported into France.

included sugar, molasses, coffee, cocoa, tea, certain spices, vanilla, &c., which, for the most part appear to pay one-half of the usual rate, there being, however, further exceptions to this rule in the case of individual colonies.

Shipping. The shipping question has lately attracted a good deal of attention; most of the colonial trade, especially the coasting trade, is at present done in foreign bottoms. The reason generally accepted as causing this state of affairs is the number of restrictive laws which hinder the development of the carrying trade in distant seas.

Omission of Tunis, Indo-China, &c. In the individual notices of French colonies which follow, Tunis has been excluded, as, being under the control of the Ministry of Foreign Affairs, it cannot be included in the regular Colonial Empire. The French possessions in India have, though included in the tables, been left out of the body of this report on account of their relatively small importance. The same has been done in the case of St. Pierre and Miquelon, because their importance, from a British point of view, is far more political than economic. Lastly, Indo-China is not included in this Report except as far as the tables are concerned. Though this vast colony is certainly one of the most prosperous, if not absolutely the most prosperous both from a financial and an economic standpoint, its direct commercial relations with the United Kingdom are trifling as compared to the volume of its trade. Out of a total trade movement in 1896 of about 6,728,000*l.*, that with the United Kingdom only amounted to about 148,000*l.*, and it cannot, therefore, be looked upon as possessing the same importance, commercially, for our own country as some other French colonies. Nevertheless it may be remarked here that a large proportion of the trade passes through Hong-Kong and Singapore. This, however, as well as all trade with all foreign countries, will suffer very severely if the scheme of heavily increasing the import duties, which is said to be under consideration, is carried into effect.

Proposed tariff legislation.

The remaining colonies are divided geographically as follows :—

1. American and West Indian colonies.
2. West African colonies.
3. Colonies in the Indian Ocean and East Africa.
4. Colonies in Oceania.

I.—America.

Martinique.

General situation. The general economic crisis which has made itself so severely felt in the West Indies has not left Martinique untouched, though the situation of the island is said, on the whole, to be slightly better than that of many of its neighbours.

Influence of sugar crisis. It is perhaps scarcely necessary to state that the main cause of its decline in prosperity is attributed to the sugar question. There are, however, two other factors which deserve to be noticed. The first, a direct consequence of the depreciation of the staple product, is the somewhat unfortunate situation of the land-holders in

general. The introduction of new forms of agriculture, destined to replace the sugar cane culture, has been widely advocated and to a certain extent carried out. That such a course has not been more universally adopted is generally attributed to the indolence of the land-holding classes; it would, nevertheless, appear not improbable that it is due quite as much to the want of capital as to the lack of energy.

Race question.

The second factor is found in the race question. The feud between black and white rests not merely upon the traditional hatred of the past, that of slave for slave-owner, but upon the social hatred of the poor for the rich. Thus, in view of the preponderance of the coloured element, the task of the French governor is sometimes difficult. The island being one of the oldest French colonies is amongst the most closely assimilated to the mother country. With universal suffrage the descendants of former slaves are able to exercise great influence at the elections of the senator and two deputies which the colony sends to France, and at those of the various local bodies.

Elections.

Population and area.

The population of Martinique is estimated at about 180,000, whilst its area is 390 square miles. The town of St. Pierre is the commercial centre. Fort-de-France, the seat of government, possesses an exceptionally fine harbour and dry-docks.

Grants of land.

The regulations with regard to grants of Government land are peculiar to the island. According to a local ordinance of 1877 these grants are made, in parcels of not more than about 15 acres, for 10 years conditionally upon only secondary crops being cultivated to the exclusion of indigenous roots and vegetables. They are revocable at any time during the 10 years should the authorities not be satisfied with the use made of the land. At the end of that period the grantee has the priority in leasing the land which he has occupied.

Administrative divisions.

Number of officials.

For the purposes of government the island is divided into two "arrondissements," nine "cantons," and thirty-two "communes." The staff of civil functionaries of all descriptions numbers 973, amongst whom 39 hold strictly administrative posts. According to the latest figures the number of troops is 738.

Local expenditure.

Colonial budget expenditure.

The local budget for 1898 placed the total ordinary expenditure at 189,789*l.* This included, firstly, a fixed charge of 3,170*l.* paid to the State for the benefit of the "Invalides," secondly, the quota of the colony in the civil and military expenditure of the home government amounting to 2,554*l.* This local estimate is, however, far from balancing the total expenditure, since the colony appears in the French colonial budget for 1899 for a sum of 102,251*l.* Therefore, assuming the local ordinary expenditure to be the same for 1899 as for 1898 and deducting the two items mentioned above, the net home and local expenditure on the colony would appear to be, in round numbers, 286,000*l.*, of which the mother country bears over 35 per cent.

Value of imports, 1888 and 1897.

The imports into Martinique in 1888 were valued at 907,581*l.*, of which 341,518*l.* were of French and colonial origin and 566,063*l.* from foreign countries. In 1897 the figures were:—

imports from France and French colonies, 434,180*l.*; from foreign countries, 416,862*l.*; total, 851,042*l.*, or a decrease in 10 years of 56,539*l.* It will, however, be observed that the imports from the mother country show a material advance of 92,662*l.*, whilst those from foreign countries have fallen off by 149,201*l.*

Value of imports from the United Kingdom, 1896.

Value of principal imports, 1896.

In 1896, the only year for which detailed official statistics are available, the imports from the United Kingdom were valued at 85,473*l.* The principal articles imported were coal, 21,832*l.*, and chemicals, 51,783*l.* Wines and spirits came almost entirely from France, her proportion being 60,852*l.*, out of a total of 64,745*l.* The trade in salted and dried fish was exclusively carried on with France and her colonies, *i.e.*, 48,894*l.* out of 49,736*l.* The importation of textiles amounted to about 84,000*l.*, and of this over 64,000*l.* was attributed to the trade with France. In the import trade the United States held the first place amongst foreign countries, providing some seven-twelfths of the foreign goods imported.

Exports, 1888 and 1897.

The exports for 1888 amounted to 928,906*l.*, of which 885,350*l.* were to France and French colonies, and only 43,556*l.* to foreign countries. In 1897 the figures were respectively:—765,013*l.*, 719,592*l.*, and 45,421*l.*, which represents a total decrease of 163,893*l.*, but a small increase in the trade with foreign countries. These figures include the value of imports re-exported.

Values of exportation of colonial products, 1896.

The exportation of purely colonial products is found in the statistics for 1896. The trade with foreign countries is quite insignificant. Sugar stands at the head of exports to France and French colonies, its value for the year being 449,318*l.* Spirits (rum, &c.) rank next at 215,722*l.*, whilst cocoa occupies the third place with a value of 19,762*l.* A few minor exports bring the total up to 698,674*l.*

Quantities, 1897 and 1898.

The following figures, extracted from a French newspaper, will, though not official, serve as showing the quantities of the principal products of the island exported in 1897 and in 1898 respectively:—

Articles.		Quantity.	
		1897.	1898.
Sugar..	Kilos. ..	34,734,000	31,450,000
Molasses	„	46,000	13,000
Tafia*..	Hectolitres ..	174,000	150,000
Coffee	Kilos. ..	1,000	1,400
Cocoa..	„	500,000	635,000
Cassia	„	119,000	134,000
Logwood	„	1,500,000	900,000
Indigo	„	676	376
Vanilla	„	..	973

Freights from French ports.

The freights charged by the Compagnie Générale Transatlantique, the principal line running to French West Indian colonies, in general are, per cubic metre or 1,000 kilos. for ordinary merchandise, 65 fr. plus 10 per cent., and for common

* A kind of rum made from the sugar-cane.

goods, 45 fr. plus 10 per cent. both from Havre, Bordeaux. and Marseilles.

With regard to customs duties it may be said that the French tariff, with certain exceptions, is in force. The exceptions, however, do not affect the more important imports from the United Kingdom. Coal is free of all duty. **Customs duties.**

The export dues are levied on sugar and molasses (1 fr. per 100 kilos.) and rum and tafia (1 centime per litre). These dues take the place of a land tax.

Guadaloupe.

The colony of Guadaloupe consists of two principal islands, Guadaloupe proper and Basse Terre, which are separated by a narrow channel, and several dependencies, of which Saint Barthelmy is the most important. Like its sister colony Martinique, Guadaloupe is one of the oldest French establishments abroad, dating back some two centuries. Its economic past is on the whole similar to that of Martinique and all other West Indian islands, and may be summed up as a long period of considerable prosperity followed by relative decay, due partially to the abolition of slavery, but mainly to the fall in the price of sugar, which has always been the chief product **Guadaloupe and Basse Terre.** **Economic history.**

Its area is 1,780 square kiloms,. and its population, rather less dense than that of Martinique, about 167,000. In general the present situation of these two colonies would appear to be fairly similar, though, whilst in Guadaloupe the race question does not seem to present so many difficulties as in Martinique, on the other hand, the economic conditions as a whole are probably somewhat more critical. **Area and population.**

The seat of Government is the town of Basse Terre, in Guadaloupe, it being also one of the most important ports, of which the second is Pointe-à-Pitre. The garrison at present consists of only 122 men of all arms. The number of officials is large, amounting to 1,152, or about one for every 145 inhabitants. Amongst them only 44 hold administrative posts in the strict sense of the expression. **Chief centres.** **Number of officials.**

The financial situation of the colony is by no means good, and it appears to be almost impossible to obtain loans for public purposes on merely colonial security. **Financial situation.**

The charges in the Home Colonial Budget for 1899 reach a total of about 64,400*l.*, whilst the Local Budget for 1898 shows an ordinary expenditure of 212,061*l.*, including the fixed charge paid to the Home Government of about 6,000*l.*, for the benefit of the "Invalides." The net expenditure of the Home and Local Governments on behalf of the colony may therefore be estimated in round numbers at 270,000*l.*, which represents about 1*l.* 12*s.* per head of the population. If it is borne in mind that in addition to this rate of expenditure the individual communes also collectively disburse about 100,000*l.* yearly, it will be seen that the cost of government, &c., is quite out of keeping with the re- **Colonial and Local Budgets.**

sources of the colony, which has not the excuse of being a new country in course of development.

Average value of production.

Indeed, the total value of the production of Guadaloupe averages annually only about 600,000*l.*, and thus the purely local administrative expenses absorb 50 per cent. of the annual worth of the agricultural and other products. This somewhat unfortunate state of affairs is mainly attributed to the irresponsible manner in which the Conseil Général wields its power of taxation, and the perhaps rather unprofitable uses to which it puts the funds thus obtained. The difficulty of obtaining capital for purposes of public utility has already been mentioned. Here the need of a guarantee from the Home Government makes itself seriously felt, since financial corporations are said to decline to lend on the security of local taxes. Not only is this question serious from a public point of view, but also from that of the individual colonists and planters. The rate of interest is high, and it is apparently impossible to obtain money on terms which would enable them to undertake more extensive agricultural ventures of the types which would serve to replace the cultivation of the sugar-cane. The principal financial establishment in the colony is the Colonial Bank of Guadaloupe, which is said not to be in an extremely flourishing condition owing to the general crisis. This establishment effects loans on standing crops, which at least enables proprietors whose land is already under cultivation to meet their current expenses, but not to undertake new operations.

The above information with regard to the financial aspect of affairs is principally gleaned from interesting reports compiled by the Chambers of Agriculture of Basse Terre and Pointe-à-Pitre, which were amongst the results of a circular issued to the governors of the various French colonies by Monsieur Trouillot, when Minister of Colonies, in August, 1898, requesting information regarding economic matters. The following remarks of a more general bearing have also been mainly gathered from the same sources :—

General local opinion.

The tendency of local opinion appears to be decidedly against large, *i.e.*, sugar plantations, and in favour of small holdings, on which so-called secondary crops should be cultivated. These secondary crops, coffee, cocoa, cotton, tobacco, and vanilla are expected to form the basis of the economic rehabilitation of the colony. With the exception of coffee, no very great progress seems to have as yet been made in the desired direction, and it may be noted that the exportation of this product, as also that of vanilla, shows a certain diminution in the matter of quantity during the first 11 months of 1898, as compared with the same period of 1897.

Sale of Government lands.

It is stated that at present a very large amount of land, well suited to cultivation, is allowed to remain fallow. A portion of this peculiarly suitable for coffee and cocoa, some 6,000 acres, forms part of the Government domain, and it is proposed to sell this into small lots of from 2½ to 10 acres.

Coffee bounty.

In Basse Terre, with a view to encouraging the growing of these crops, the bounty system has lately been re-established. These bounties are given for a maximum area under cultivation of 2 hectares (5 acres), and amount for coffee and cocoa to 200 fr. per hectare, and for tobacco and cotton to 150 fr. per hectare. Hitherto, however, the cultivation of both the latter products seems to be of very small importance.

Prices of land and average production, &c.

The average production of the coffee plantations is stated to be 600 kilos. per hectare, and that of the cocoa plantations, 1,500 kilos. per hectare, whilst the value of the products is respectively 2 fr. 80 c. and 1 fr. 50 c. per kilo. The current expenses of these plantations in full bearing, exclusive of the cost of picking, is given at about 8*l.* per annum and per hectare for coffee, and 6*l.* for cocoa.

Vagrancy

A very serious point with regard to the general situation is found in the question of vagrancy, which has assumed alarming proportions, and appears to be most difficult to eradicate.

Value of imports, 1888 and 1897.

In 1888 the imports to Guadaloupe from France and colonies were valued at 464,804*l.*, and those from foreign countries at 495,327*l.*, giving a total of 960,131*l.* In 1897 the figures were respectively, 358,569*l.*, 317,917*l.*, and 676,486*l.* The total import trade had thus fallen off in the 10 years by 283,645*l.*, though it will be noticed that proportionately the French and colonial trade had maintained its position better than the foreign.

Value of imports from Great Britain in 1896.

In 1896, out of a total trade with foreign countries of 406,263*l.*, the imports from the United Kingdom amounted to 138,988*l.* The principal articles were:—Guano, 56,563*l.*; rice, 30,052*l.*; coal, 20,365*l.*; chemicals, 19,255*l.*; and cotton textiles, 6,482*l.* The imports from the United States were a little over half the total of the foreign goods (as regards value) reaching the island during the year under consideration.

Value of exports, 1888 and 1897.

The exports from the colony in 1888 reached a total of 1,031,322*l.*, of which 1,013,977*l.* went to France and colonies, and 17,345*l.* to other countries. In 1897 the exports to France and colonies represented a value of 439,712*l.*, and those to other countries, 6,139*l.* Thus the export trade had, in the decade, diminished by 585,471*l.*

Trade almost exclusively with France.

The trade, which consists principally of sugar, coffee, rum, tafia, cocoa, and logwood, is carried on almost exclusively with the mother country herself. In 1896 the exports to Great Britain were valued at between 10*l.* and 11*l.*

Freights.

The freights from Havre, Bordeaux, and Marseilles, per Compagnie Générale Transatlantique, to Pointe-à-Pitre are, per cubic metre or 1,000 kilos. for ordinary goods, 65 fr.; and for common goods, 45 fr. from Havre, and 45 fr., plus 10 per cent., from the other two ports.

Customs duties.

With certain exceptions, the colony is subject to the French customs tariff. The export dues are levied on sugar, 80 c. per 100 kilos.; on molasses, 1 fr. per hectolitre; on coffee and cocoa respectively, 3 fr. 25 c. and 1 fr. per 100 kilos.

Trade of Great Britain with French West Indies, 1894–98.

The following tables, extracted from the "Annual Statement of the Trade of the United Kingdom" for 1898, serve to show the value, according to British statistics, of the trade with the French West Indian colonies for the five years 1894–98:—

Trade of Great Britain with French West Indies, 1894–98.

IMPORTS into the United Kingdom.

Principal and other Articles.	Value.				
	1894	1895.	1896.	1897.	1898.
	£	£	£	£	£
Total value	815	50	..	7,723	86

EXPORTS from the United Kingdom.

PRODUCE and Manufactures of the United Kingdom.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Coal, cinders, and fuel ..	28,883	18,183	17,546	18,872	11,686
Cottons, entered by the yard	56,704	31,495	35,600	25,715	21,770
" " at value ..	2,369	1,588	1,651	1,217	1,915
Linens, entered by the yard	1,577	621	769	810	375
Machinery and mill work ..	1,818	243	1,858	321	343
Manure	56,998	43,183	62,042	32,281	42,776
Metals: iron, wrought and unwrought	3,559	2,460	2,842	1,258	1,620
Woollens and worsteds, entered by the yard ..	1,014	335	762	499	617
Parcel post	16	5	12	2	3
All other articles	7,390	8,856	13,081	5,868	6,034
Total	160,328	106,969	136,163	86,843	87,139

*French Guiana.**

Penal settlements.

French Guiana owes most of its notoriety to its being the seat of one of the principal French convict settlements, which is divided into four main stations, Cayenne, Kourou, the Iles du Salut and Maroni. Though the various expenses connected with the penal administration are provided for in the Colonial Budget, this subject can scarcely be said to have any very direct connection with the colony from an economic point of view, and need, therefore, not be dealt with in extenso here. It may, however, be remarked that, for various reasons, the attempts to utilise convict labour for general purposes do not appear to have been very successful.

* The latest information with regard to the trade of French Guiana will be found in Mr. Vice-Consul Wacongne's Report for 1898, No. 2360 Annual Series.

Area and population.

The area of the colony, according to the latest official figures, is estimated at 13,087 square kiloms. M. E. Petit, however, in his authoritative work, "Organisation des Colonies Françaises," gives the area as 121,413 square kiloms., not including the contested zone. The population is nearly 27,000. The country, therefore, ranks almost on a par with French Somaliland in the matter of sparseness of population. The town of Cayenne, both the official and commercial capital, was founded by the French as early as 1654, and the French claim over this portion of South America dates from that year, though the capital passed through both British and Dutch hands previous to 1815.

Administrative divisions.

For administrative purposes the colony is divided into 14 communes, exclusive of the Maroni district. This arrangement was first introduced in 1879, but abrogated in 1889, being finally re-established in 1892. One deputy represents the colony in the French Chamber.

Number of officials, &c.

The number of officials is 521, amongst whom 23 hold purely Governmental posts. These figures do not include the staff of the penal settlements. The number of troops appears to be 380.

Colonial Budget.

The charge in the 1899 French Colonial Budget on behalf of French Guiana amounts to 252,203*l.* Of this sum, however, 194,689*l.* represents the estimated expenditure on account of the penal settlement, and consequently, from a strictly colonial point of view, does not rank. The net cost of the colony to the mother country may be taken as 57,514*l.*

Local Budget.

The local ordinary expenditure for 1898 was estimated at 97,158*l.*, including a total sum of some 3,500*l.* paid to the Home Government. The transfer of that portion of the civil and police expenditure, which is at present borne by the Home Government, and the suppression of the payment made by the colony to the Colonial Budget, would, in this case, result in a net increase of local expenditure of nearly 16,000*l.* In round numbers, the total net annual expenditure would at present appear to be about 150,000*l.*, a comparatively high rate in view of the smallness of the population and the slight importance of the general trade. The possibility of meeting this expenditure is largely accounted for by the 6 per cent. export duty on gold, which, owing to the increased production during 1895–96, enabled the reserve fund to reach its maximum.

Climate, &c.

From a general point of view, there is little to be said about French Guiana. The climate is distinctly unhealthy, and the country, consequently, but little suited to European colonisation. In fact, all attempts of this class on anything like a large scale have proved failures.

Forests.

The interior is, to a great extent, covered with dense forests, containing many kinds of valuable tropical timber, which, as yet, have not been rendered as productive as might have been the case had the general conditions been other than they are. In this, as in almost all other possible sources of development the lack of adequate labour has been a fatal hindrance to progress. The natives are not to be attracted even by high wages. A large

proportion of the blacks, at the time of the abolition of slavery, betook themselves to the interior and the introduction of Indian coolies did not prove successful.

Immigration. It has been suggested that the immigration of Annamites might give better results since the climatic conditions of the two countries are somewhat similar, and Annamite convicts liberated after serving their time have been found to thrive.

The colony is, apparently, in many respects one of the least profitable to the mother country, and, whilst by no means amongst the most expensive, does not seem to hold out the same prospects for the future as some other portions of the French Colonial Gold mines. Empire. In fact, were it not for the gold mines the value of the exports would be practically nominal. The precious metal is mainly found in alluvial deposits, though a certain amount of gold bearing quartz is also worked. Its production, though almost the only source of wealth of the colony, is made responsible by competent authorities for the small amount of attention which, up to the present, has been devoted to the various agricultural products to which both climate and soil are said to be well suited. It is complained that the few European immigrants, instead of establishing themselves permanently as colonists and giving themselves up to the cultivation of the soil, are immediately attracted by the gold mines.

Value of imports, 1888 and 1897. The value of imports into French Guiana in 1888 was 485,992*l.*, consisting of 328,960*l.* from France and colonies, and 157,032*l.* from other countries. In 1897 the total value of goods imported stood at 373,356*l.*, the French and colonial trade being represented by 253,559*l.*, and the foreign by 119,797*l.* In a total decrease in the 10 years of 112,636*l.* the commerce with France and her colonies has fallen off by 75,401*l.*, and that with foreign countries by 37,235*l.* The trade with the mother country and dependencies had, therefore, proportionately suffered rather more severely than that with other countries.

Imports from Great Britain. According to the French official statistics no direct trade took place with the United Kingdom in 1896, though the appended table, extracted from the "Annual Statement of Trade of the United Kingdom for 1898," places the figure for that year at 4,844*l.*

Value of exports, 1888 and 1897. The total value of exports from French Guiana for 1888 was 238,170*l.* The exports to France and French colonies were worth 229,718*l.*, and those to foreign countries 8,452*l.* In 1897 the exports to France and French colonies were valued at 277,446*l.*, and those to other countries at 8,981*l.*, giving a total of 286,427*l.* Thus, whilst the value of exports to the mother country and her colonies had increased by 47,728*l.* the trade with foreign countries had remained practically stationary.

Value of exports, 1896. In both cases the figures include the value of imports re-exported. The value of purely colonial products exported in 1896 was 350,022*l.* This consisted almost entirely of gold with the exception of about 7,700*l.* worth of phosphate of lime. The gold went entirely to France, whilst, according to French statistics,

about 6,500*l.* worth of the phosphates was sent to the United States. No mention is made of any exports to the United Kingdom. On the other hand, there is an importation from French Guiana of phosphates to the value of 5,275*l.*

With certain exceptions French Guiana is subject to the home customs tariff. These exceptions consist mainly of the exemption of various food products, timber, &c., from all duty, whilst raw tobacco pays 50 fr., manufactured tobacco 150 fr., and cigars and cigarettes 250 fr. per 100 kilos. **Customs duties.**

The freights per the Compagnie Générale Transatlantique steamers from Havre, Bordeaux, and Marseilles to Cayenne for ordinary goods is 80 fr., for common goods from Havre 60 fr., and from Bordeaux and Marseilles 60 fr., plus 10 per cent. in all cases per cubic metre or per 1,000 kilos. **Freights.**

TRADE of Great Britain with French Guiana.*

IMPORTS into the United Kingdom.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Manures: phosphate of lime and rock	2,048	4,350	5,275	8,790	3,600
All other articles	..	..	..	..	..
Total	2,048	4,350	5,275	8,790	3,600

EXPORTS from the United Kingdom.

PRODUCE and Manufactures of the United Kingdom.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Cottons, entered by the yard ..	3,983	1,829	2,319	1,920	1,255
Metals: iron, wrought and unwrought	522	1,502	1,989	1,900	356
All other articles	920	795	536	1,216	342
Total	5,425	4,126	4,844	5,036	1,953

* British Customs statistics.

II.—West Africa.

Decree of October 17, 1899.

Before entering upon the individual notices of French West African colonies it may, perhaps, not be out of place to remark that these possessions have just undergone a new phase of development. Hitherto the vast territory under French suzerainty in the interior, comprising many different districts and peopled by many different races, has been included in a single colony—French Sudan—which, a somewhat vague definition, embraced the whole of the French sphere of influence in this part of the world, with the exception of the more direct hinterlands of the various French colonies on the West Coast.

Basing the presumption of their advisability upon the progress already made, Monsieur Decrais, Minister of Colonies, on October 17 last, addressed a report to the President of the Republic, proposing the following modifications which were duly sanctioned by a Decree of the same date:—

1. The absolute administrative and fiscal incorporation in Senegal, the Ivory Coast, French Guinea, and Dahomey of the greater part of the western and south-western portions of the French Sudan, leaving to that colony only its northern and north-eastern districts which will henceforth be divided into two military zones under the jurisdiction of two military officers.

2. The placing of the supreme local power with regard to all French West African colonies in the hands of a governor-general, resident at St. Louis.

3. The institution of a supreme local military chief, the auxiliary of the governor-general, having under his orders the whole of the armed forces of the nation in French West Africa.

4. The incorporation in the local budget of Senegal of the local budgets of the two military zones above referred to.

It may be noted that, whilst these changes are of the first importance from administrative and fiscal points of view, their direct effect upon trade, particularly as regards imports, is not likely to be very far reaching, as all goods destined for the French Sudan must, under any circumstances, enter by one of the usual routes from the coast to the interior.

Senegal.

It is only since 1855 that Senegal has seriously attracted the attention of the French authorities, the name of General Faidherbe, who first formed the project of uniting Algeria to the West Coast possessions, being indissolubly associated with the conquest of the region.

Frontiers.

The maritime frontier runs from Cape Blanco to the British colony of Gambia. South of this again, the flourishing district of Casamance, extending as far as Portuguese Guinea, is included in the colony. The land frontier towards the interior is somewhat undefined. According to the decree of October 17, 1899, the districts of Kayes, Bafulabeh, Kita, Satadugu, Bamoko, Segu,

Djenneh, Nioro, Gumbu, Sokoto, and Buguni, hitherto part of the French Sudan, are included in Senegal.

Form of government.

The form of government varies for the different parts of the territory, according to the length of time during which they have been under French rule. The tax-paying districts possess a greater or less degree of local self-government, whilst a very considerable tract of country is still under a merely nominal protectorate. A single deputy represents the colony in the French Chamber.

Number of officials, &c.

The number of officials of all classes is 620, of whom 182 hold purely administrative posts. The number of troops is 2,600, of whom 1,252 are natives.

Principal ports.

The principal towns are St. Louis, the capital; Dakar, and Rufisque. It appears probable that Dakar is destined to hold an important position as a commercial centre and port of call, not only for Senegal, but for the whole West Coast.

Local Budget.

The general economic situation of the colony has, it is said, improved very considerably of late years. The reserve fund has reached its maximum and the local expenditure, including over 16,000*l.* for public works, was estimated at 155,618*l.* for 1898, whilst the quota of the colony in the general French Colonial Estimates for 1899 amounts to 241,859*l.* The total average annual expenditure would appear to be between 390,000*l.* and 400,000*l.* The colony now pays a little under 2,000*l.* per annum to the Home Government. As a result of the reforms already mentioned, this payment will be cancelled, and, on the other hand, the civil and police expenditure now borne by the Colonial Budget, amounting to slightly over 7,000*l.* per annum, will be charged upon the Local Budget.

Colonial Budget.

Public works.

The condition of affairs is considered so flourishing that it is proposed to undertake public works on a larger scale than heretofore. The expenditure necessitated is estimated at from 8,000,000 to 10,000,000 fr. to be covered by a loan raised after the conversion of the present debt. The principal undertakings in view are roads in the neighbourhood of the centres, a wharf at St. Louis and a railway through the Baol country. The protectorates in the interior will probably be called upon to bear a part of the cost of the latter.

Dakar–St. Louis Railway.

The situation of the railway from Dakar to St. Louis seems still to be far from satisfactory. The receipts do not as yet balance the working expenses, and between the guaranteed interest and the deficit the line appears in the Colonial Budget for a sum of about 40,000*l.* The general prosperity has had its effect upon the Colonial Bank of Senegal, which for the financial year 1897–98 paid a dividend of 5 per cent.

Custom duties.

The customs duties in Senegal are at the rate of 7 per cent. *ad valorem* for all merchandise of foreign origin imported, with the exception of guineas which pay 31 c. per metre. French and colonial guineas (chiefly from the Indian Settlements) pay 2½ c. per metre. The personal property of colonists, &c., is exempted from all charges. The export dues are 7 per cent. ad valorem on

all products exported from the Casamance district and 1 fr. 50 c. per 100 kilos. on gums exported from the Senegal River.

Freights. The freights from Marseilles and Bordeaux are as follows:—

Marseilles: Dakar, 20 fr. per ton of the general French tariff; Rufisque, 22 fr. 40 c.; St. Louis, 40 fr. The steamers belonging to Fraissinet and Co., which sail once a month, carrying the mails and subsidised by the Government, are the only regular means of communication between Marseilles and the above ports.

Bordeaux: Dakar, Rufisque, and Goree, 20 fr. per metric ton; St. Louis, 30 fr.

Value of imports, 1888 and 1897. The value of imports into Senegal for 1888 was 1,022,283*l.*, of which 498,068*l.* came from France and colonies, whilst 524,215*l.* was due to foreign trade. In 1897 the figures were respectively 1,155,640*l.*—667,428*l.* and 488,212*l.*—showing a net increase of 133,357*l.* It will, however, be observed that the imports from France and colonies increased by 169,360*l.*, whilst those from foreign countries decreased by 36,003*l.*

Imports from Great Britain, 1896. In 1896 the imports from the United Kingdom were valued at 154,873*l.* Textiles (mainly cotton), 114,760*l.*, and coal and compressed fuel, 21,365*l.*, were the principal commodities imported. On the other hand, the imports from France for the same year amounted to 464,311*l.* The principal items were cereals and flour, 90,213*l.*; textiles, 86,750*l.*; wines and spirits, 52,550*l.*; sugar, etc., 40,090*l.*; hardware, etc., 28,480*l.*

Principal imports.

Value of exports, 1888 and 1897. The exports of the colony in 1888 were valued at 655,209*l.*, of which 465,638*l.* went to France and colonies and 189,571*l.* to foreign countries. In 1897 the trade was valued at 837,094*l.* Of this, products worth 637,840*l.* went to France and colonies and 199,254*l.* to foreign countries. The total net increase was, therefore, 181,885*l.*, in which the trade with France stands for over 170,000*l.*, and that with foreign countries for about 10,000*l.* In both years the figures include the value of imports re-exported.

Exports to the United Kingdom, 1896. In 1896 the exports of colonial products to the United Kingdom were valued at 82,525*l.* The main exports were, ground-nuts, about 72,000*l.*; and rubber, 5,665*l.* In the same year France received 254,475*l.* worth of ground-nuts, 117,940*l.* worth of gums, and 17,670*l.* worth of rubber. With regard to the latter product it may be mentioned that a system of differential export duties is under consideration. This measure is calculated to drive all the rubber exported from French West Africa on to the French market.

Trade in 1898. The official figures showing the trade of the colony during the year 1898 have just been published.

Imports, 1898. The imports reached a total of 1,313.069*l.*, those from France and her colonies being worth 830,852*l.*, and those from foreign countries 482,217*l.* Of this latter amount, the imports from the United Kingdom were valued at 292,554*l.* The trade in cotton textiles was worth about 372,000*l.*, the share of the United Kingdom being about 122,000*l.*, or nearly 33 per cent. of the total. Of unbleached, bleached, dyed, and printed cotton goods some 68 per cent. (as regards value) came from the United Kingdom, whilst,

Cotton textiles.

on the contrary, fully three-fifths of the guineas were of French origin. Coal holds the second place during 1898 amongst the British merchandise imported.

Exports, 1898.

The exports during the same year reached a total value of 1,154,336*l.* France and her colonies absorbed 916,197*l.* worth of local produce, leaving a residue of 238,129*l.* for foreign countries. The exports to the United Kingdom were worth about 26,400*l.* and consisted almost entirely of india-rubber.

Shipping.

The total number of vessels entering and clearing at Senegalese ports during 1898 was 1,011 of a tonnage of 1,372,885 tons, as compared to, in 1897, 1.021 with a tonnage of 1,144,071 tons. British vessels numbered 265 with a tonnage of 387,995 tons in 1898, and 255 with a tonnage of 323,329 tons in 1897.

French Sudan *

Frontiers.

The French Sudan comprises a vast territory stretching from Algeria and Tunis in the north to the Royal Niger Company's present sphere of influence in the south and from the hinterlands of the various colonies on the West Coast to a line drawn from the southernmost point of Tripoli to Lake Tchad in the East.

Area and population.

Its area is given in the report on the Colonial Budget for 1897 at 120,000 square kiloms., and its population at 2,400,000. This has naturally decreased considerably since the reorganisation of French West Africa, already mentioned; nevertheless, M. Petit, in his work on the Organisation of French Colonies, published in 1894, remarks that it is impossible to determine the limits of the French Sudan, which vary according to the annual conquests, or to arrive at an exact estimate of the number of inhabitants.

Previous history.

The era of French conquest in this part of Africa may be said to have begun, more or less, with the expedition against El Hadj Omar as early as 1854, followed by the siege of Medina on the Senegal and its relief by General Faidherbe in 1857. Until 1880 this town was the last French post on that river. Since then, however, very numerous expeditions associated with the names of Borgnis-Desbordes, Gallieni, Frey, &c., have been carried out from various directions with a view to subjugating the country, and, in 1897, French power was represented by no fewer than 39 more or less important military posts.

Administration.

Indeed, though a certain amount has of late been done towards endowing the country with an administration more akin to the civil administration existing in most French colonies, the territories held by France appear to be almost entirely under military rule.

Number of military posts.

The number of military posts was made the subject of criticism by M. Siegfried in the report on the Colonial Budget for 1897, and

* Though this colony, as already mentioned, has quite lately been to a great extent disintegrated, it has been thought best to maintain the notice in its present form. It must be borne in mind that large tracts of country now no longer belong to it administratively, having been incorporated in other French West African colonies.

he suggested that their reduction, as far as was compatible with the maintenance of French supremacy, might be advisable. The figures for the present year are, unfortunately, not available, and, whilst they may have been concentrated, the number of troops in the country has risen slightly from 3,256 in 1897 to 3,408 at present.

Colonial Budget.

Since 1891 the colony has proved a source of serious expense to the French Government. In 1894 and 1895 the annual expenses amounted to 470,848*l.* and 388,286*l.* respectively, whilst the amount voted for 1896 was 338,000*l.*; for 1897, 252,480*l.*; and for 1898, 247,200*l.* The vote for this year shows a total expenditure of 246,600*l.*, including a sum of 26,455*l.* for the building and maintenance of the railway from Kayes on the Senegal to Bamoko on the Niger. This total outlay is slightly lower than that necessary during 1898; on the other hand, it is considerably below the average of the whole period since 1891. The principal difficulty which hinders the normal development of the French Sudan would seem to lie in its still unsettled state. Constant expeditions against native chieftains, even during last year, are spoken of in the report on the Colonial Budget for 1899, and the Reporter indicates that he is by no means certain that the need for them has, as yet, disappeared. At the same time the local financial

Local Budget.

situation shows a tendency towards improvement. The estimated local receipts, as given in the "Quinzaine Coloniale," reach this year a total of 129,247*l.*, or an increase over the estimates for 1898 of 21,504*l.* As almost the whole of this increase of revenue is expected from higher receipts from direct taxation, it may, perhaps, be safely inferred that the local authorities expect the present to prove a year of greater tranquillity than those which have preceded it.

Notwithstanding the need of the already-mentioned military expeditions it will, however, be seen from the following table, compiled from the official report for 1898, that, during the last four years, the local financial resources have developed considerably. It may be noted that the apparent diminution in 1897 was due to the creation of a special railway budget, resulting in the withdrawal from the local budget of both receipts and expenditure under this head:—

Year.	Amount.	
	Receipts.	Expenditure.
	£	£
1895	99,585	99,646
1896	138,995	129,468
1897	118,504	118,504*
1898	149,739	149,739*

* Estimate.

Kayes–Bamoko Railway.

The railway from Kayes to Bamoko is a project which has

already been some time in course of execution. But by means of new arrangements which have been made, both of a financial nature and in the method of building, it is hoped that the line will be finished by 1903. According to a convention ratified by the Finance Act of 1898, the Government and the colony undertake to contribute in equal shares and by instalments a sum not exceeding 24,000,000 fr. during the 24 years following that date. The annual subsidy to be granted by the Government is never to be less than 500,000 fr., and the right of forestalling the subsidy is reserved. The colony, for its part, has just been authorised to negotiate a loan with the Caisse des Depôts et Consignations to the amount of 3,208,000 fr., redeemable in 24 years, for the carrying on of the work during the current year. The economic value of this line will undoubtedly be very great, as it will place the upper waters of the Niger in rapid and direct communication with the ports of the Senegalese coast during the whole rainy season when the river is navigable for large vessels, whilst, even in the dry season it will serve to shorten the transit to and from the interior considerably. According to an official report, it appears that at the end of 1898 164 kiloms. of line had been laid. The receipts from traffic amounted in 1898 to 16,400*l.*

Trans-Saharian Railway.

Whilst speaking of railways it may, perhaps, be well to call attention to a much more ambitious scheme which finds one of its principal advocates in Monsieur Paul Leroy-Beaulieu, the well-known editor of the "Economiste Français" and author of the standard work on colonisation already mentioned. The scheme referred to is the Trans-Saharian Railway. In a couple of articles published last autumn in his journal on this subject Monsieur Leroy-Beaulieu admits that the importance of the railway, owing to the peculiar position occupied by France in Algeria and Tunis, is mainly strategic, since, with the military force there at its disposal it would place the country in a position to command the whole north-western portion of Africa. At the same time, however, he holds out the hope of a certain trade movement in the future, whilst he estimates the cost at from 10,000,000*l.* to 12,000,000*l.*

Economic value.

The French Sudan is still, comparatively speaking, so little known a country that its economic future must necessarily be, more or less, a matter of conjecture. It is natural to suppose that as the pacification of the various districts proceeds, trade will increase. For the present, however, though no complete statistics are available, the Reporter on the Colonial Budget for 1899 takes a somewhat pessimistic view of the situation, particularly as regards the importation of French goods, and sums up his remarks by stating that the imports from the mother country consist of stores, &c., for the use of the army whilst the real mercantile transactions are carried on by traders of other nationalities. He further notes that the sum total of the imports shows a tendency to fall off.

According to the Official Report for 1898 the values of imports and exports in 1897 and 1898 were respectively as follows:—

	Value.		Increase or Decrease in 1898.
	1897.	1898.	
	£	£	£
Imports..	311,094	318,024	+ 6,930
Exports..	162,440	143,627	− 18,813

The value of imports from France and French colonies in 1898 (including French Guinea) was 107,771*l.*, and that of the imports from foreign countries and their colonies (including Sierra Leone), 99,816*l.* The remainder of the imports are credited to neighbouring parts of Africa including Liberia. The value of French textiles was rather higher that of foreign textiles; the latter coming mainly from the United Kingdom and Belgium. In the general trade this is by far the most noteworthy import.

The great difference between the importations and exportations is partly due to the impossibility of securing comprehensive and exact data with regard to the latter.

The latest general economic information regarding the country is epitomised in the "Trade and Shipping of Africa," published by the Board of Trade; and it will, therefore, be best to quote *in extenso* the remarks contained in that publication.

"The French campaigns of 1889 and 1894 opened up to French trade the middle courses of the Niger, and in 1895 Lieut.-Colonel Trentinian, Governor of the Sudan, devoted himself to reducing the expenses of the army of occupation and the development of agriculture and trade. At the same time the number of stations for the collection of *oussourou* were increased, this being a tax which is in principle the levying of 1 per cent. in goods on caravan cargoes: further, the annexation of the country between the Niger and the Bani, the establishment of a protectorate over Massina, and the pacification of the Mossi tended to increase, to the profit of the Local Budget, the levy of *oussourou* on the many commercial transactions which are out on the Eastern frontier.

"The writer of the article in the 'Economiste Français,' from which the above is taken, goes on to say that the establishment of French authority over these districts, by assuring tranquillity and security for business transactions, has brought about a revival of trade.

"The requirements of the natives have increased; the ways of communication have again become frequented, villages have been built or re-built, and, since 1893, patents, licenses and market rights have been duly regulated. Licensed ferrymen at fixed rates have been provided for the crossing of rivers, and, finally, there has been attached to the Colonial Government since April 1, 1897, a consulting commercial committee consisting of four French merchants and three native representatives. Owing to this organisation the total movement of trade in 1896 rose to 28,500,000 fr.

As in all new countries, the importation of European goods holds an important place; the value of the imports into the Sudan of piece-goods in 1896 amounted to 3,158,000 fr.

"The country produces cottons of medium quality and coarsely woven, which are sold in widths of 20 centims., at from 20 to 50 c. the metre, according to quality, colour, and distance of country of origin; but the natives prefer a softer and more attractive material, and at Timbuctoo a good market is found for silk piece-goods of medium quality at a price of from 10 to 15 fr. the metre.

"The approximate number of pieces of long cloth imported was 120,000 at Kayes and Medina, 18,000 at Timbuctoo, and 3,000 into the markets of the South. The country has consumed 116,000 pieces of 15 metres each at a price varying from 50 c. to 1 fr. 25 c. the metre.

"This latter price of 1 fr. 25 c. at which the cloth is sold at Timbuctoo is too high, and in consequence there is a ready market in that district for the native material which was disposed of in 1896 to the value of 116,000 fr., and to compete successfully with this native product, the price of the imported article must not exceed 1 fr. With regard to the competition of foreign long cloth and other piece-goods with the French article, it is keenest in the districts of the South, where they command the market. It would appear that this success arises from the fact that the English houses on the coast are better supplied than the French, that the intercourse is most cordial, the prices lower, and the products of the interior paid for immediately in silver instead of being exchanged against other products. As far as Timbuctoo is concerned, the various piece-goods of foreign (*i.e.*, other than French) manufacture come from Morocco, Tuat, and Tripoli.

"After piece-goods, articles of food form the most important article of import from Europe.

"In 1896, the value of these was 509,000 fr., of which 30,000 fr. worth went to Timbuctoo and the rest to Kayes and Medina. In the total value of goods consumed by the administration of the Sudan, provisions and preserved foods figure for 155,000 fr., this including besides preserved food, grocery stores; wines and spirits were valued at 141,000 fr. The natives are very partial to syrups, but they also appreciate absinthe and brandy. After these two categories of products come sugar, 95,000 fr.; and white salt 63,000 fr. The consumption of flour was stated to be also on the increase; but of all these articles of food, the most appreciated, perhaps, is salt which before the conquest might be said to have been a luxury, while now it costs only 20 c. the kilo. at Kayes, and if it can be conveyed without much loss to the banks of the Niger, it will fetch at least 1 fr. the kilo. This difference in value ought to tempt traders, and indeed the transport of salt is already carried on on a large scale. The absinthe trade also brings great profits.

"At Timbuctoo the price of articles of food is much higher than at Kayes: sugar there costs 5 fr. and tea 50 fr. per kilo., and the quantity imported is, consequently, small. In 1896 there

were imported at Timbuctoo but 2,687 kilos. of sugar worth 20,995 fr., 173 kilos. of tea worth 8,650 fr., and 42 litres of absinthe worth 504 fr., all of which were French except 175 kilos. of sugar bearing an English mark, and 344 kilos. bearing a Belgian mark—from Morocco.

"The southern districts of the Sudan consume 24,000 fr. worth of rock salt, of which three-fourths are of English origin, and these districts serve as markets for British manufactured goods, while the other parts of the country are more especially open to French products. Glassware, much sought after by the natives, comes chiefly from Germany as regards the northern, and England for the southern districts. On the whole, notwithstanding these and other exceptions which might be noted, France furnishes the greater part of the trade in miscellaneous goods; for, of a total value of 307,000 fr. in 1896, French goods represent 257,000 fr.; British, 21,000 fr.; German, 9,000 fr.; and American 20,000 fr. (perhaps tobacco). Besides salt there is another African product of which great quantities are imported into the Sudan, and that is the kola nut. In French territory it is only found at Kissi, and as it is the most common article of exchange in the country, it is brought thither from other parts. The value of this import in 1896 was 1,350,000 fr., or about 24,500,000 nuts, the price varying from 2 fr. 50 c. to 15 fr. the 100 nuts according to the origin and also according to their size and colour, the pink nuts being more highly esteemed than the yellowish-white ones. The kola nut is much appreciated for its medicinal property as a tonic, but it is also in great request in certain native ceremonies such as betrothals, marriages, &c.

"French Sudan also imports animals for food, such as oxen and sheep, the natives consuming neither veal nor pork. The imports of oxen are however small, and have been valued at 14,000 fr., one ox being worth from 60 to 100 fr., but this represents such a small number that it falls short, perhaps, of the actual facts. Yet the daily consumption of Timbuctoo is estimated as being 30 oxen and 1,000 sheep; and, on the other hand, the valley of the Niger from Bamoko to Sansanding is a capital grazing country; the animals breed rapidly, and though the flocks and herds have been ravaged by epidemics, it cannot be doubted that in time the Sudan will become an exporter of both sheep and oxen. It would probably be an easy matter to strengthen the race of sheep by judicious cross-breeding, and live-stock raising may be reckoned as one of the resources of the Sudan.

"It is, moreover, by no means the only one, for to it may be added gum, indiarubber, gold, ivory, hides, and feathers.

"Medina is the great centre of the gum trade. The amount of gum exported from Kayes and Medina in 1895 was 462,502 kilos. of a value of 231,000 fr., which rose in 1896 to 1,210,000 kilos. of a value of 605,000 fr. Gum is also met with in large quantities in the Timbuctoo market where it is worth from 15 to 20 c. the kilo.

"The Government of the Sudan are making efforts also to develop the caoutchouc industry, which is all the more important considering the varied uses to which rubber is now applied, and, in order to encourage the cultivation, the natives have been notified that it would be received in payment of taxes. Collected at Kayes, it is there sold by public auction. In 1895 this brought in 2,200 fr., and in 1896 20,500 fr. The value of 1 kilo. of rubber rose from 2 fr. 30 c. in 1896 to 4 fr. 8 c. in 1897, on account of better methods of preparation. The exportations of rubber to this coast increased in 1896 as compared with 1895.

"Ivory is less abundant, the elephant being hardly hunted at all by the natives. On the other hand the ostrich feather industry may become an important one. An ostrich farm established at Timbuctoo is already working at a profit, and others are being established. As far as gold is concerned, estimates vary, and it is said that some districts, such as Boure and Bambouk, contain very rich deposits."

*French Guinea.**

Frontiers. French Guinea was definitely organised as a separate colony in 1893. Previous to that period it was under the jurisdiction of the Governor of Senegal. The northern boundary of the colony is formed by Portuguese Guinea and the southern by Sierra Leone, whilst towards the interior it comprises the rich protectorate of Futa Djallon, the capital of which is Timbo, some 200 kiloms. from the coast. Further, French Guinea now includes the districts of Denguiray, Siguiri, Kurussa, Kankan, Kissidugu and Beyla, lately transferred from the French Sudan.

Number of officials. There are in all 241 officials, about 180 native troops officered by Europeans and 42 colonists of whom 22 are of French nationality.

Konakry. It would appear that Konakry, the capital and only important centre, is gradually supplanting Sierra Leone in the trade of this portion of the West Coast. As a port of call it is visited annually by a large number of vessels. The latest figures show that during **Shipping movement.** the year 1898 the shipping movement consisted of 2,369 vessels, of a tonnage of 263,763 entering and 2,286 of a tonnage of 263,127 clearing, discharging 15,393 tons and loading 4,491 tons, of which respectively 9,534 tons and 2,882 tons were carried in British bottoms. The Chargeurs Réunis steamers from Havre and the Fraissinet mail boats from Marseilles each call there once a month; in addition to this the Belgian line is said to have lately deserted Sierra Leone in its favour. Besides the road from Konakry to the Niger, of which a certain portion has already been built, the project of a railway seems to have assumed a definite shape. Work **Konakry-Kardamana Railway.** will probably be begun shortly, as the colony has contracted a loan of 8,000,000 fr. for the purpose, and it is proposed to connect the port with Kardamana, a point on the upper Niger. Should

* The latest information with regard to the trade of French Guinea will be found in Mr. Consul Arthur's Report for the year 1898, No. 2364 Annual Series.

the scheme be carried out it seems likely that Konakry will become one of the most important commercial centres on the coast.

Local Budget. According to the figures of the Local Budget for 1898 the finances of the colony are in a flourishing condition. The local receipts were 70,763*l.*, and the expenditure 53,805*l.* Of this sum 15,898*l.* was expended on public works. The subsidy allotted for 1899 in the Home Colonial Budget estimates amounts to 12,700*l.* Since, however, 4,000*l.* of this was voted for the road to the Niger and about 4,500*l.* for the military expenditure, the colony may be regarded as practically self-supporting.

Colonial Budget.

Value of imports, 1892, 1897 and 1898. During the six years from 1892 to 1897 inclusive the general trade of the colony has grown greatly in importance. In 1892, the first year for which separate figures are available, the imports were estimated at 142,945*l.*, French goods being placed at 24,134*l.* and foreign at 118,811*l.* In 1897 the imports amounted to 302,497*l.*, divided into French and colonial trade, 48,520*l.*, and foreign trade 253,977*l.* The imports from other colonies were very small and the goods imported from the mother country had, therefore, about doubled, whilst the importation of foreign goods had increased by about 112 per cent. The latest official figures show that, in 1898, the total imports were worth 360,795*l.*; the respective proportions of France and her colonies and other countries being 59,422*l.* and 301,573*l.* Of the latter the share of British trade was 65 per cent.

Imports from Great Britain, 1896. In the year 1896 the value of goods imported from the United Kingdom was 52,398*l.* Of this cotton textiles were valued at 36,540*l.*, and metal goods, hardware, &c., at 3,521*l.* It is satisfactory to observe that, according to figures given in the official report the imports from the United Kingdom in 1898 were worth 207,487*l.*, and represented fully 57 per cent. of the total. The increase has shown itself particularly in cotton goods which were worth 139,402*l.* The chief imports from France are wines and spirits, rice, hardware and metal goods, cement and lime, arms and ammunition. Germany, which stands third upon the list, sends rice, arms, and spirits. The importation of the latter, from all sources, shows a diminution of 50 per cent. during the second quarter of 1898 as compared with that of 1897.

Cotton textiles.

Value of exports, 1892 and 1897. The values of colonial products exported in the year 1892 were: to France, 24,237*l.*; to foreign countries, 134,675*l.*; total, 158,912*l.* In 1897 the figures were respectively: 26,770*l.*, 239,577*l.*, and 266,347*l.* Thus the trade with France increased by 2,533*l.*, and that with foreign countries by 104,902*l.* during the six years.

Exports, 1896. Details. The only detailed official statistics are those for 1896. In that year the direct exports to the United Kingdom were trifling, 5,129*l.* The trade for the most part passed through Sierra Leone, that colony being credited with 164,835*l.* worth of products. The principal items were, in round numbers: live-stock, 15,000*l.*; rubber, 109,100*l.*; gum, 10,600*l.*; palm-oil and kernels, 8,000*l.*; raw hides, 6,700*l.* From the somewhat incomplete figures available for the second quarter of 1898 it is evident that the rubber export trade is increasing very rapidly. Its value for the three months is estimated at some 60,000*l.* The other staple products would

appear to have fallen off somewhat. The exports to the mother country have, it is said, decreased owing to the rubber being now shipped direct to destination instead of to Havre for transhipment.

The most important provisions of the local customs tariff are as follows: on foreign goods indirectly imported—textiles and clothing, 20 fr. per 100 kilos.; tobacco, 10 fr. per 100 kilos.; gunpowder, 20 fr. per 100 kilos.; other goods, 3 fr. 60 c. per 100 kilos. A general export duty of 7 per cent. ad valorem is levied on all products. **Customs tariff.**

Freights from Marseilles to Konakry are 35 fr. per ton. **Freights.**

Ivory Coast.

The Ivory Coast owes its organisation as a separate colony to the decree of March 10, 1893. Like French Guinea and Dahomey it had previously been under the jurisdiction of the Governor of Senegal. It is situated between the Republic of Liberia and the Gold Coast. Towards the interior it includes, as a protectorate, the Kong territory, and thus, like all other French colonies in this region, joins on to the French Sudan, and now includes the districts of Odjenneh, Kong and Buna, which formed part of that territory. The two principal French towns are Assinie and Grand Bassam, the latter being the seat of government. **Frontiers.**

The capital appears to be in course of development as a trade centre. A wharf is being built, roads towards the interior, notably one to Bonduku, tapping the Gold Coast Hinterland, have been constructed, a line of telegraph has been established as far as Bettie and the materials necessary for carrying it on towards French Sudan landed, finally the preliminary surveys for a railway, eventually to run as far as Kong, capital of the protectorate of that name, have been carried out. **Proposed railway to Kong.**

The population comprises two distinct races sub-divided into various tribes amongst whom the Jack-Jacks, who carry on the palm-oil and kernels industry are the most important from a commercial point of view. The number of officials is 348, of whom 41 are employed in administrative posts. There are no regular troops and only 52 colonists including 16 of French nationality. **Population.** **Number of officials, &c.**

The Ivory Coast possesses the peculiarity of being one of the few colonies receiving no assistance of any description from the Home Government in financial matters, paying, on the contrary, a trifling contribution. The ordinary receipts and expenditure for 1898 were estimated at 51,881*l.*, the latter including nearly 10,000*l.* for public works. The export duties on mahogany and other woods did not, however, produce as much as was expected, and consequently the estimated receipts for this year are somewhat below the figures for 1898. **Local Budget.**

The principal difficulties which hinder the rapid development of the colony are said to be the lack of adequate means of communication with the interior and the extreme sparseness of the population which amounts to only nine inhabitants per square **General considerations.**

kilometre. Nevertheless the general economic situation appears to be fairly satisfactory. Bonduku is becoming a centre of trade between the French Sudan and the coast. There passed through Assikasso, in December, 1898, 226 caravans with 335 loads, 330 with rubber and 5 with ivory. The exportation of the latter commodity, from which the colony takes its name is now, however, insignificant. With regard to rubber it is expected that the exportation will double in the course of the present year, and it is a notable fact that the natives succeed in collecting it without killing the trees. It is also expected that the exportation of gold dust will, in the future, assume larger proportions, but it is still questionable whether gold can be found in sufficient quantities to render its working profitable to Europeans. French firms appear to be taking the place of those of other nationalities. An instance of this is found in the fact that the French West Africa Company has lately acquired the business of an old-established and important British house There now remain three British firms carrying on trade in the colony. It is interesting to notice that there are several large native merchants, mostly in the mahogany trade, who deal directly with Europe.

Rubber.

Gold.

Value of imports, 1892 and 1897.

The imports in 1892 were worth a total of 78,399*l.*, France forwarding goods to the value of 7,204*l.* and foreign countries, 71,195*l.* In 1897 the imports had increased to 185,893*l.* Of this the colony received 27,908*l.* from France, an increase of 20,804*l.* in the six years, and from foreign countries, 157,985*l.*, the trade having thus grown by 86,790*l.* According to the "Quinzaine Coloniale" the total value of imports in 1898 was 221,732*l.* which would mean a further increase of over 35,000*l.* The official detailed statistics for 1896 place the British merchandise imported at a value of 123,974*l.* The principal items were: cotton textiles, about 29,000*l.*; arms and ammunition, 24,000*l.*; hardware and metal goods, 14,800*l.*; tobacco, 7,200*l.*; spirits, 4,700*l.* According to the latest information it would appear that, comparing the last quarter of 1898 with the same period of 1897, the importation of spirits, salt and threads had doubled, whilst that of textiles (not including silk) had increased by about 15 per cent.

Imports from the United Kingdom, 1896.

Value of exports, 1892 and 1897.

In 1892 the value of exports was 148,068*l.* Of this 55,958*l.* went to France, and 92,110*l.* to foreign countries. In 1897 the trade had increased to 186,876*l.* The share of France amounted to 88,848*l.*, an increase as compared with 1892 of 32,890*l.*, and that of other countries to 98,028*l.* or a slight increase of 5,918*l.* The United Kingdom received in 1896 83,799*l.* worth of products. Mahogany represented about 21,200*l.*; gold dust, 20,200*l.*; rubber, 17,000*l.*; palm oil, 16,800*l.*; and kernels, 5,700*l.* By comparing the same periods as those mentioned in speaking of the import trade, it is found that the exportation of palm oil had doubled and that of rubber increased by about 64 per cent.

Exports to the United Kingdom, 1896.

Customs tariff.

The colony possesses a special customs tariff. Most imports from foreign countries pay 10 per cent. *ad valorem.* Certain classes of merchandise, such as fancy goods, leather articles, and clothing, pay 3 per cent. *ad valorem.* The most important excep-

tions to these general rules are: cutlery, tools, hardware, and tobacco, which pay respectively 25, 15, 12, and 10 fr. per 100 kilos.

The freights charged from Marseilles to Grand Bassam are 35 fr. plus 10 per cent. per cubic metre for liquids, and 40 fr. plus 10 per cent. per cubic metre for textiles. Freights.

Dahomey.

It was only by the decree of June 22, 1894, that Dahomey was organised as a colony distinct from other French West African possessions, though certain portions of the coast had been under French rule for a considerable time. Whydah, the present capital and commercial centre, became a French factory in the early days of colonisation in this part of the world; it was not, however, until 1893 as the consequence of a successful expedition against the King of Dahomey, that the interior became subject to French domination. Conquest of Dahomey.

The colony lies between Togoland on the west and Lagos on the east. To the north, *i.e.*, towards the interior it stretches back to meet the vast territory under French influence on the Upper Niger, part of the Liptako country and the Say territory having been transferred from French Sudan to Dahomey. The country appears to be fairly well populated, a special feature being the size of the towns. The inhabitants of Abomey number 60,000, those of Adjara 50,000, those of Kana 25,000, those of Whydah 15,000, &c. The principal port is Kotonoo, which for several years has been provided with a wharf doing away with the inconvenience and delay formerly caused by the bar. The latest fact in connection with the general economic development of the colony is the proposal to build a railway from Kotonoo viâ Carnotville and Nikki to the Niger; thus, in the event of this and other similar projects already mentioned being carried out, the French Government will, in the course of a few years, find itself in possession of several lines uniting its colonial ports with the great river. Frontiers. Chief towns. Kotonoo–Niger Railway.

The officials of all descriptions number 553, and of these 45 are engaged in administrative duties. The military element is represented by a body of local militia. There are 21 foreign and 12 French colonists. Number of officials, &c.

The colony is, from a financial point of view, entirely self-supporting and receives no subsidy from the Home Government. The local expenditure for 1898, including about 9,000*l.* for public works, was estimated at 74,653*l.* The revenue did not quite cover this amount, and it was found necessary to draw upon the reserve fund to the extent of 5,940*l.* Financial situation.

The general import trade of the colony has grown steadily since 1892, the first year for which precise data are available. It was then valued at a sum of 254,759*l.*, the merchandise of French origin amounting to 72,747*l.*, and that of foreign origin to 182,012*l.* In 1897, out of a total of 326,452*l.* the importations Value of imports, 1892 and 1897.

from France and French colonies were estimated at 116,075*l.*, an increase since 1892 of 43,328*l.*, and those from foreign countries at 210,377*l.* or an increase of 28,365*l.* It will thus be observed that the rate of increase was up to that period largely in favour of the mother country.

Imports from the United Kingdom, 1896.

In 1896 according to official statistics, the imports from the United Kingdom amounted to 50,680*l.* or about 13·1 per cent. of the total. Cotton textiles represented 27,803*l.* and tobacco about 7,500*l.* In the same year the trade with Lagos amounted in round numbers to 85,000*l.*, and that with Germany to 95,000*l.* In the latter case spirits were the principal import since their value was given at about 54,000*l.*, indeed, alcoholic beverages constituted nearly 50 per cent. of the total value of all imports.

1898 imports.

The "Quinzaine Coloniale," quoting from the "Journal Officiel du Dahomey," states that the goods imported in 1898 reached a value of 395,840*l.* The value of textiles showed a marked increase of 33,000*l.* as compared with 1897, and the quantity of spirits imported rose from 4,169,261 to 4,720,084 litres. The same journal also gives an interesting comparison between the first quarters of 1898 and 1899, according to which the imports during the latter exceeded those during the former by about 27,700*l.* Of this nearly 7,000*l.* was due to textiles, and it is stated that both the United Kingdom and Lagos profited extensively by the increase.

Value of exports, 1892 and 1897.

The exports in 1892 were valued at 287,521*l.* Products sent to France and French colonies amounted to 63,320*l.*, and those forwarded to other countries, 224,201*l.* After having grown fairly steadily until 1896, the exports fell off slightly in that year, and yet more in 1897, when the values were: total, 228,865*l.*; to France and colonies, 60,502*l.*, *i.e.*, 2,818*l.* less than in 1892; and to other countries, 168,363*l.*, a diminution of 55,838*l.* The official details for 1896 show that the direct trade with the United Kingdom in colonial products amounted to only 10*l.* Lagos, on the other hand, ranking next to France, absorbed over a third of the total, taking nearly 140,000*l.* worth of products, including kernels to a value of some 80,000*l.*, and palm oil worth about 34,000*l.* It may be noted that the direct exports to Germany stood at a value of about 64,000*l.* The "Quinzaine Coloniale," in the article quoted above, showed that the export trade had recovered the lost ground in 1898, and had reached a total of 298,564*l.*, or a little over 30 per cent. more than in 1897. The increase in the quantities of palm oil and kernels exported were respectively 48 and 40 per cent. The figures for the first quarter of 1899, as compared with the same period of 1898 show a further proportionate increase.

Exports to the United Kingdom, 1896.

1898 exports.

Shipping movement.

The steamers arriving at the ports of Dahomey during the year 1898 numbered 433. The French flag was carried by 111, the British by 133, the German by 156, and the Italian by 25 steamers.

Customs duties.

In general the customs duties are at the rate of 4 per cent. *ad valorem*. There are, however, certain exceptions, those of most interest to British exporters being textiles, which pay 50 c., and tobacco, which pays 35 c. per kilogramme.

The freights from Marseilles to Kotonu are, for liquids, 35 fr. per cubic metre, and for textiles 40 fr. per cubic metre. Freights.

French Congo.

The colonies of Gaboon and French Congo proper were united under the name of French Congo by the decree of May 3, 1891. If the Upper Ubanghi region, which for administrative purposes was to a great extent severed from it in 1894, be included, it ranks amongst the largest of French colonies. To the north it is bounded by the German possession of Cameroon, to the south by the Congo Free State, whilst towards the interior it follows the Ubanghi in a northerly and easterly direction until it reaches the line delimitating the French and Anglo-Egyptian spheres of influence fixed by the Convention of March 21, 1899. Frontiers.

Whilst no regular census of the inhabitants of French Congo has ever been undertaken, it would appear that the population of this vast territory is generally estimated at about 5,000,000. The capital and seat of Government is Libreville, on the northern shore of the Gaboon. This town, however, in 1894 had only about 1,700 inhabitants, including some 200 Europeans. Other centres on the coast are Cette Cama and Loango, the latter the point of departure for Brazzaville, the most important French post in the interior. The number of officials is 580, amongst whom 111 hold administrative positions. The military force consists mainly of local militia, and the colonists reach a total of 78, including 14 of French nationality. Population. Chief centres. Number of officials, &c.

The cost of this colony forms a somewhat heavy item in the estimates of the French Colonial Budget. The amount of estimated expenditure on its behalf for 1899 is 93,386*l.*, whilst the total cost to the State amounts to 98,660*l.* In 1898 the local expenditure was estimated at 138,669*l.*, including a subsidy of 1,000,000 fr. to the Upper Ubanghi, bringing the total cost of the colony up to between 230,000*l.* and 240,000*l.* Colonial Budget. Local Budget.

The Congo country appears to be one of the least developed amongst French West African colonies. The principal defect is stated to lie in the lack of proper means of communication. M. Jules Siegfried, in his report on the Colonial Budget for 1897, remarks that no agricultural and commercial progress can be expected to take place until the navigable portion of the Congo has been made easily attainable from the coast. The report on the Colonial Budget for 1899 states: "With the exception of a few sanitary works at Libreville, and the construction of a line of telegraph, on the one hand from Loango to Cape Lopez, which is finished, and on the other hand from Loango to Brazzaville, for which a credit of 50,000 fr. was inscribed on the Local Budget for 1898, there are scarcely any public works in the Congo. Neither, it must be admitted, does one find traces of an organised administration, though there are a good number of officials. . . . Our domination in the Congo is at present, on the whole, more fictitious than real. We possess, Development

in a territory of about 1,800,000 square kiloms., only a small number of posts whose influence can only make itself felt in a circumscribed area."

Grants of land.

The question of grants of land in the French Congo has of late excited considerable attention, and a special mission has been sent for the purpose of delimitating the numerous concessions accorded to various commercial associations. A new set of regulations, apparently more or less based upon the Torrens principle, has been issued regarding the matter. Certain of them would seem to be held by competent authorities to be of such a nature as to hinder the progress of the country, and it remains to be seen whether the movement will have a lasting effect, and provide French capital with a profitable outlet. It may be noted that one publication, the "Journal des Chambres de Commerce," gives a considerable amount of credence to the rumour that a number of the applicants are merely the representatives of Belgian capitalists.

Names of Companies.

The following table gives the concessions already granted up to the end of August, 1899, to private individuals, with the names of the companies subsequently formed for their working :—

Name of Company.	Name of Original Grantees.	Where Situated.	Area.	Capital.
			Square kilom.	Francs.
Société du Haut-Ogooué ...	Daumas	Upper Ogooué ...	166,000	3,000,000
Société de l'Afrique Française...	Ritaine-Deschamps ...	Sanghat and Mobaka, between N'Daki	9,350	1,000,000
Cie Française du Haut-Congo ...	Tréchot Frères	Likuala Mossako ...	36,000	2,000,000
Compagnie de la Sangha ...	Dimmig et Campagne ...	Gokoula and N'Daki	5,400	800,000
Cie des Produits de la Sangha	Mestayer	Sanghat	9,650	1,500,000
Société de l'Ekéla-Sangha ...	Guynet	Sanghat	5,040	700,000
Sté. Comm. et Agri. de la Kadéï-Sangha	Nouzaret	Mambéré*	6,500	600,000
Sté. de l'Afrique Equatoriale ...	Nicol Bernain	Lobaï N'Ghié... ...	33,850	1,200,000
Cie des Caoutchoucs et prod. de la Lobaï	Cauvez	Lobaï	32,400	2,000,000
Société de la Haute-Sangha ...	Durand	Mambéré* and Kadéï	18,050	1,200,000
Société de la Kadéï-Sangha ...	Gazengel (1)	Sangha*	12,900	1,000,000
Société de l'Ogooné-N'Gounié ...	Gazengel (2)	Ogooné...	3,350	500,000
Compagnie Française du Congo	Faure et Boutelleau Desbrières	Likuala-aux-Herbes...	55,100	3,000,000
Sté. Agri. et Comm. de l'Alima...	Jacta-Decourcelle ...	Alima*	20,200	800,000
Société du Baniembé	David	Between Lobai and Ibenga	3,600	700,000
Société de l'Ibenga	Siegfried	Ibenga	14,200	1,500,000
Cie Franco-Congolaise de la Sangha	Delineau	Moyen-Sangha* ...	3,600	600,000
Sté. des Etablis. Gratry-M'Poko	Gratry	M'Poko	13,900	1,200,000
Sté. de la Sangha Equatoriale...	Collas	Lower Sangha ..	5,100	800,000
Société l'Alimaïenne	Cousin	Alima*...	8,300	1,000,000
Cie Générale du Fernand Vaz ...	Izambert	Fernand Vaz	16,500	1,500,000
Sté. de la N'Kéni et N'Kémé ..	Romaire	N'Kémé and N'Kéni ..	1,200	700,000
Société de la Setté-Cama ...	Devès	Setté-Cama	23,400	1,200,000
Cie Française du Congo Occidental	Vergnes, Lindenboom, et Cie, et Delignan	Nyanga	20,200	1,800,000
Cie de la Haute-N'Gounié ...	Leplus	Upper N'Gounié ...	1,100	900,000
Sté des Factoreries de N'Djolé	Monthaye	Lower N'Gounié ...	4,200	600,000
Cie Comm. de Colon. du Congo Français	Cie Française du Congo et des Colonies Afric.	Nana Poundé... ...	12,400	1,000,000
Société de l'Ongomo	Jobet	Ongomo	8,200	800,000
‡	Martin	Mobaye	8,000	1,000,000
Société la Kotto	Remy, Martin, Boulet Mahieu et Génestal	Kotto*	37,000	2,500,000
‡	Lang	Kouango*	15,300	1,125,000
Cie du Kouango-Oubanghi ...	La Revellière	Kouangot	15,000	1,125,000
‡	Normandin	Upper Mambéré ...	5,600	600,000
Cie Agri. Comm. et Industrielle de la Léfini	Bouvier	Léfinit	13,700	1,200,000
‡	Sté. du Bas Ogooné ...	Lower Ogooné ...	2,200	600,000
‡	Bazenet	Lagune M'Ganio ...	2,800	400,000
Cie de N'Goko (Ouesso)... ...	Paquier, Mimerel, Kunkler	Lagune N'Goko ...	...	1,250,000
Société Sultanats du Haut-Oubangui	Bouchart, Couvreux, &c.	Sultanats	...	9,000,000
‡	Laroche-Kergariou ...	Ombéla	...	1,000,000

* Right bank. † Left bank. ‡ Company not yet formed.

General trade.

With regard to the state of trade in the colony, the latest details have been given in the Board of Trade publication, "the Trade and Shipping of Africa." It need only, therefore, be mentioned here that the total imports and exports in 1892, the first year for which official figures are available, amounted to 205,803*l.* and 98,955*l.* for France and French colonies and foreign countries respectively. Since that period, whilst on the whole showing a fairly upward tendency, both branches of commerce have been subject to a certain amount of fluctuation. The principal imports are metal goods, spirits, and textiles, the latter coming for the greater part from the United Kingdom. The usual West African staples, rubber, palm oil, and, notably, a considerable amount of ivory, form the chief exports.

Customs tariffs.

In the matter of customs tariffs the colony is divided into two distinct sections. From N'Bombo to Cette Cama the general French tariff, with a certain number of exceptions, is in force. Textiles pay 20 per cent. *ad valorem*, raw tobacco 50 fr., and manufactured tobacco from 150 to 250 fr. per 100 kilos., according to quality. A provisional export duty of 7 per cent. *ad valorem* is levied on rubber and ivory.

The rest of the territory, from Cette Cama to Massahe, being within the basin of the Congo, is therefore under the Customs régime of the Berlin Act. The duties vary considerably according to the class of merchandise. Textiles of all descriptions pay 20 per cent. *ad valorem*. The export duties are levied on all products calculated at a general rate of 7 per cent. *ad valorem*. At present, only ivory and rubber are taxed.

Freights.

The freights by the Fraissinet steamers to Libreville from Marseilles are, per cubic metre, 40 fr. for liquids, and 45 fr. for textiles.

Trade of United Kingdom with French West African colonies.

The subjoined tables, which have appeared in the "Annual Statement of the Trade of the United Kingdom with Foreign Countries," will show for the five years 1894–98, and according to British statistics, what has annually been the value of produce imported from, and purely British goods exported to, the French West African colonies as a whole:—

TRADE of the United Kingdom with French West African Colonies, 1894–98.

IMPORTS into the United Kingdom.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Caoutchouc	116,294	125,175	117,752	143,965	285,120
Dye-woods (other than logwood)	1,987	1,375	564	341	950
Gum, of all sorts	3,152	2,324	2,381	5,561	11,875
Hides, raw..	..	..	..	64	4,923
Ivory: teeth, elephants', &c.	10,655	12,952	10,337	11,515	16,773
Nuts and kernels: for expressing oil therefrom..	7,606	1,726	2,338	7,123	13,152
Oil, palm	25,818	37,158	12,415	9,586	11,134
Skins: furs of all sorts ..	898	1,143	980	192	31
Wax	288	143	625	878	2,172
Wood, furniture woods and hard woods—					
Mahogany	47,835	31,476	50,299	127,481	81,590
Unenumerated ..	5,292	5,954	3,790	4,320	1,290
All other articles.. ..	2,378	2,278	1,961	1,404	2,182
Total	222,198	221,704	203,442	312,480	431,192

EXPORTS from the United Kingdom.
PRODUCE and Manufactures of the United Kingdom.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Apparel and haberdashery	1,227	3,452	4,380	4,302	5,863
Arms, ammunition, and military stores	15,018	18,108	24,334	19,386	15,736
Coal, cinders, and fuel ..	16,615	11,341	12,363	19,696	12,828
Cotton yarn	1,862	1,357	1,325	1,624	2,397
Cottons—					
Entered by the yard ..	110,512	183,508	235,917	271,974	374,252
„ at value ..	4,109	7,654	9,891	15,398	17,531
Earthen and chinaware ..	1,426	2,976	2,980	2,728	3,898
Hardware, unenumerated	1,255	3,457	4,362	3,070	2,613
Cutlery					2,016
Metals: iron, wrought and unwrought	2,547	8,393	10,102	11,570	15,227
Oil: seed	51	99	490	6,050	10,860
Provisions (including meat)	629	2,771	4,306	4,585	4,940
Salt..	866	4,281	3,310	5,168	5,814
Spirits: British and Irish	754	1,719	1,992	2,274	3,082
Telegraphic wires and apparatus	30	1,105	..	24	12,413
Wood, manufactures of ..	3,922	9,378	7,695	4,136	7,108
Parcel post	10	12	15	130	46
All other articles	12,147	23,234	24,796	29,109	35,224
Total . ..	172,980	282,845	348,258	401,224	531,848

III.—INDIAN OCEAN AND EAST AFRICA.

Madagascar.

Previous history in relation with France.

The island of Madagascar is one of the later additions to the French Colonial Empire, although its connection with France dates back as far as the 17th century. The nominal protectorate was, however, only established by the treaty of December 17, 1885, which also arranged for the occupation of the Bay of Diego Suarez by the French, whilst a decree of May 4, 1888, first defined Diego Suarez, Nossi-Bé, and Ste. Marie de Madagascar as actual possessions and placed them under the authority of a single Governor Thus, French sovereignty, even over a small part of the island, can only be said to date from the latter period. During the 11 years which have elapsed since that time events have followed each other very rapidly, the Hova Government has been entirely supplanted, and the whole country may practically now be said to be under French dominion.

Though so recent an acquisition, Madagascar is attracting a very large share of the attention now devoted to colonial matters in France. French capital, reputed to be somewhat shy of colonial undertakings, is beginning to find in it a fresh outlet, and the tide of emigration, never very strong in France, has, up to a certain

point, turned in the direction of the island. Nevertheless, a very considerable proportion of the colonists, small traders, &c., who have during the last few years established themselves in Malagasy territory, are natives either of Mauritius or Réunion.

From the general point of view, as much political as economic, the results obtained up to last year were, on the whole, somewhat negative. The subjugation of the Hovas and the suppression of the large and small revolts which had broken out, had occasioned the expenditure of large sums of money and necessitated the maintenance of a considerable number of troops in the island. The military element has already been somewhat reduced.

Military force.

According to the latest figures given in the Colonial Budget for 1899, the number of troops is at present 11,305. Though isolated difficulties with the natives, usually caused, it is said, by the action of irresponsible colonists, still occur, the need for active intervention of this order appears to be gradually passing away, and the outlook, politically, seems more promising.

General Gallieni's report.

Notwithstanding this fact, General Gallieni, whose valuable report, published in the "Journal Officiel," forms, together with the "Immigrant's Guide," published under his supervision, the latest authoritative source of information, shows himself decidedly averse to the diminution of the military force for the present.

Though the island undoubtedly possesses important natural riches, it seems improbable that, for some time to come, it will rank as a paying investment.

Colonial Budget.

The total cost of the colony to the mother country during the current year is estimated in the Colonial Budget at 997,267*l.*, divided into two heads: military expenditure, 925,980*l.*; and direct subsidy to the Local Budget, 71,287*l.** The Reporter on the Budget, however, appears to foresee the probable necessity for further supplementary votes for military purposes. Indeed, these in 1898 amounted to about 7,000,000 fr. On the supposition that an increase in trade, proportionate to that of the last two years, takes place during the present year, the mother country would appear to be expending about 1,000,000*l.* sterling for the sake of a market worth, in round numbers, 900,000*l.* The situation, however, shows an appreciable improvement, but it must be borne in mind that the great increase in French trade during the latter half of 1897–98 was due to the new customs tariff, and that for the future its growth can scarcely be expected to continue with equal rapidity.

Local Budget.

On turning to the Local Budget a very much more favourable state of things is found to exist. Both in 1896–97 the revenue (including the subsidy) was in excess of the expenditure, the surplus for the latter year being over 60,000*l.* For 1898 the exact figures are not yet available. The "Quinzaine Coloniale," however, in a recent number estimated the revenue at about 499,000*l.*,

* The cost of the local militia about equalled the subsidy in 1899 according to the estimates. The subsidy is, however, purely for administrative purposes.

and the expenditure at about 431,000*l.*, leaving a surplus roughly equal to the annual subsidy. Should these figures prove correct, the colony may be regarded, as far as purely local affairs are concerned, as self-supporting. But it must be borne in mind that for the future the customs receipts will necessarily show a serious falling-off. The subsidy can, nevertheless, avowedly not be dispensed with. Hitherto, in consequence of the difficulties attending the subjugation of the country little has been done administratively with regard to its development. A certain amount of road and canal-making has been entrusted to private enterprise, but there appears to be little doubt that the major part of such works will have to be carried out by the local authorities themselves.

Means of communication.

In his report General Gallieni goes into the matter very thoroughly. He indicates a complete network of roads, whose construction it would be desirable to undertake immediately, to replace the mere paths which appear at present to be the sole means of internal communication between the various centres.

Further, he proceeds to mention the building of a railway from Tamatave to Tananarive (Antananarivo), the improvement of the ports of Tamatave and Majunga, the development of the telegraph system, &c. These works he estimates at a cost of about 50,000,000 fr. This sum he proposes to raise by means of a loan, the service of which would be covered by the surplus revenue, conditionally upon the annual subsidy from the Home Government being continued.*

Tamatave–Tananarive Railway.

The area of Madagascar is over 590,000 square kiloms., and its population has been variously estimated at from 5,000,000 to 6,000,000. The most numerous and intelligent race are the Hovas, a people of Malay origin. The other five tribes, Sakalaves, Betsiloes, &c., are of negro blood.

Area and population.

The whole centre of the island is mountainous, rising in places to a height of 9,000 feet. Round the coast, however, runs a belt of low-lying, unhealthy, but very fertile land. Up to the present comparatively little is known respecting the mineral wealth of the island.

Physical characteristics.

Gold in small quantities is known to exist in many districts, and in certain parts of the colony it has been worked for some time. Hitherto, however, scarcely any lodes have been discovered, the little mining which is carried on is almost exclusively for alluvial gold, which is not found in very remunerative quantities.

Gold mining.

Iron exists throughout a great portion of the island, and has been worked and smelted by the natives for local purposes, such as primitive tools, &c. The only known copper mines appear to have been worked out by the natives. Lead, tin, zinc, antimony, mercury, platinum, nickel, and sulphur are said to exist, whilst it seems to be a debatable question whether extensive coal-fields do not exist in the north-western district.

Other metals.

* A Bill has now been laid before Parliament for a loan of 60,000,000 fr. (2,400,000*l.*) to be devoted to the construction of railways, lighthouses, roads, telegraph lines, &c.

Forests. The forests are large and produce a variety of valuable kinds of timber, including ebony, rosewood, mahogany, &c. Little has, however, been done towards developing this source of wealth.

Rubber and rafia. Midway between purely agricultural products and forest products may be placed rubber and rafia.* The former is one of the most important products of the island. The rubber-producing plants and vines exist throughout all the forests though their number has been greatly diminished, notably in the Fort-Dauphin, Fenerife, and Foulpointe districts, by the reckless manner in which they have been destroyed with a view to immediate profit, the consequence being that the exportation has fallen off seriously during the last few years. The rafia palm grows generally not further than 15 or 20 kiloms. from and 25 or 50 metres above the sea.

Agricultural products. Vanilla, coffee, and cocoa are somewhat extensively grown, besides tobacco, rice, and manioc, the two latter forming the staple food of the natives. Both vegetable wax and beeswax are collected in considerable quantities in the forests, whilst the breeding of cattle is extensively carried on.

Live-stock and hides. The exportation of hides has been very large. The herds, however, are said to have suffered greatly during the late insurrection, so much so that various administrative measures for their protection have been found necessary, the beneficial results of which already showed themselves during 1898, as will be seen hereafter.

Commercial centre. Principal ports. The capital of the Island is Tananarive, called by the natives Antananarivo, a town of about 100,000 inhabitants. The chief commercial centre is Tamatave, a port upon the east coast. There are in all about 20 ports and roadsteads on the Malagasy coast, for the most part on the eastern side of the island. The following information regarding them may be extracted from "Trade and Shipping of Africa":—

"*Helleville*, in the island of Nossi Bé, is a very important centre of trade. The harbour is good and the steamers of the Messageries call there twice a month, in addition to which it is the starting point of the coasting trade with the smaller western ports of the island, carried on by means of a small steamer, in connection with the mail from France. The trade along this coast, as far as Majunga, is in the hands of Indians, who deal in English and German goods, and Bombay textiles. There are two important German trading firms established at Nossi Bé.

"*Majunga.*—Owing to its situation on the Mozambique Channel and to its excellent harbour, Majunga is destined to become one of the starting points of the Antananarivo trade route, and to have a commercial future of its own. The waterway of the Betsiboka River is practicable for small steamers as far as Suberbieville, 200 miles from the coast, for nine months in the year. From that point to the central plateau the road is being improved, and trade will grow as security of communication in the island increases. The geographical position of Majunga marks it as a centre of trade with South Africa, which will

* A palm-tree fibre.

become an outlet for the natural produce of this island, such as live-stock, colonial goods, &c. Many trading steamers visit Majunga, both those from the Zanzibar coast, and those which arrive yearly from Bombay in March with the north-east monsoon and return to India with products of the colony with the south-west monsoon in August. These vessels are generally of from 90 to 120 tons, and from 25 to 30 of them touch at Majunga every year, while other smaller vessels connect the port with Nossi Bé, Zanzibar, the Comoro Islands, Morondava, and Nossi Vé, and a smaller steamer of the Messageries line makes a monthly double trip between Nossi Bé and Nossi Vé (St. Augustine's Bay), calling at Majunga and Maintirano.

"*Other Western Ports.*—To the south of Cape St. André, in the Mailaka district are several small ports, of which the chief are Tombolaron and Maintirano, which once carried on a considerable trade by sailing vessels with the African coast. These and the smaller ports of Manambolo, Tsimanandrafozana, and Morondava are solely worked by Indians, who export to the German houses of Nossi Bé, gold dust, wax, rubber, and woods and essences from the neighbouring forests.

"Between the Mangoky and the Onilahy (St. Augustine River) lies the district of Fiherena, where rich meadows and forests are found, and the natives cultivate maize and the bean known as 'Cape peas.' Gold dust, rubber, wax, and tortoise-shell are also exported, and this region once furnished quantities of orchilla, a dye moss, the collection of which has been almost entirely abandoned. The imports of the West Coast consist chiefly of cloths, cotton goods, glassware, rum, gunpowder, and iron household utensils, and the majority of these goods are of German origin. At one time the trade of the West Coast was almost entirely in the hands of the French, but, about the year 1870, English, German, and American houses, and many Indian and Arab traders settled themselves at certain points occupied by the Hovas.

"*Diego Suarez* is a place of call for the steamers of the Messageries line, and since October 1, 1896, has been the starting point of the branch line for Mozambique, Beira, and Lourenço Marques. The Havre S.S. Co. and other vessels carrying cattle to Mauritius and Réunion, also touch at Diego Suarez, and at the time of the north-east monsoon many sailing vessels from Bombay bring supplies for the Indian traders.

"*Vohémar.*—The export trade of this port is principally in cattle, conveyed on a small steamer belonging to a French company, and carried on by Indian and Chinese traders, who penetrate far into the interior, bearing on the backs of native porters cotton goods, common in design and glaring in colour, household utensils, glassware, common cutlery, imitation pearls, yarn, needles, &c., which they barter for rice, gum, beeswax, rubber, skins, woods, and "rafia."

"*Ste. Marie de Madagascar.*—This island, facing the little port of Tintingue and a dozen miles from the mainland, has a good

anchorage, and is also a place of call for the Messageries steamers.

"*Tamatave.*—This is the commercial centre and principal trading port of the whole island. Two lines of reef protect it from the high sea, thus affording a comparatively safe anchorage.

"There are a certain number of French merchants established at Tamatave, but English, American, German and Swiss houses do also a fair amount of business; Indian traders are numerous, and as for the Chinese, they have more than a hundred establishments, where they chiefly sell rice and other provisions used by Europeans. In view of the increase in the number of these Asiatics, the Government has taken measures in the form of taxation to minimise the effect of their competition. Improvements of various kinds are being carried out and contemplated at the port of Tamatave, including the construction of jetties lit by electric light, and sheds for storing purposes. The steamers touching at Tamatave are those of the various French companies, and the Oswald line of Hamburg, besides numerous sailing vessels and schooners connecting Tamatave with the lesser ports of the north and south.

"*Andévoranto.*—Situated 100 kiloms. south of Tamatave and not protected like that port by coral reefs, the export trade (chiefly ox-hides and 'rafia') of Andévoranto can only be carried on when the state of the sea permits lighters to pass the bar and load the vessels at anchor outside, *i.e.*, during about eight months in the year. This port has nevertheless a certain commercial status, it being the point where the trade route from Tamatave to Antananarivo leaves the coast, and about 10 trading firms are established or represented there.

"*Vatomandry.*—After Tamatave this is the chief port of entry for textiles destined for the interior. Vatomandry is connected with the capital Antananarivo by a route along which goods are conveyed for 60 c. per kilo.; whereas between Tamatave and Antananarivo the charge is 1 fr. per kilo. As at Andévoranto the bad roadstead compels many vessels to unload at Tamatave.

"*Other Eastern Ports.*—The absence of direct communication with the two ports of Mananjary and Fort Dauphin is the chief cause of the decadence of trade in those parts. The greater portion of the exports from these two provinces goes to London, while some of it is conveyed by the Castle line to Hamburg. The ports of Farafangana and Vangaindrano are visited by sailing vessels from Mauritius, and the former is now the station of a Resident."

Percentage of trade.

It may be remarked that out of the whole general trade of the island in 1897, 52·2 per cent. passed through Tamatave, 15·1 per cent. through Majunga, 8·8 per cent. through Diego Suarez, 7·5 per cent. through Nossi-Bé, 5·1 per cent. through Vatomandry, and 4 per cent. through Mananjary.

Influence of customs tariff.

It is very evident that foreign, and in particular British, trade could scarcely have suffered more severely than has been the case

since the imposition of the new customs duties of which the most onerous are those upon textiles.* The new tariff was instituted in July, 1897. In May, 1898, however, the duties on textiles were again raised to the rates given below.

In order to form an approximate estimate of the altered situation it appears useless to go back further than 1896 since the trade statistics, previous to that year, with the exception of 1895, are said to be somewhat incomplete.

Principal imports.

Cotton textiles are by far the most important class of goods imported. Next, though far behind, follows spirits, of which the consumption by the natives is said to be making such rapid strides as to necessitate preventive measures. Wines, coal, various textiles, rice, machinery, and cast-iron goods are amongst the other notable imports, their value in 1897 running in the above order.

The latest general figures are found in General Gallieni's report which shows that the countries doing most trade with the colony are France, the United Kingdom, Germany, and the United States.

Imports in 1896.

In 1896 the total value of the goods imported into the colony was 553,977*l.* French and colonial merchandise amounted to 218,406*l.*, including 72,488*l.* for textiles. The imports from Great Britain and British possessions are, for that year, made to include those from Manila to the extent of 53,070*l.* out of a total of 232,610*l.*, leaving a net British trade of 179,540*l.*, in which British textiles represented 128,763*l.* The value of goods imported from Germany is given at 21,346*l.*, whilst the imports from the United States were estimated at 28,675*l.* These figures are interesting as showing the development of the import trade under normal tariff conditions. It may, perhaps, here be noted that in the "Statistiques Coloniales pour l'Année 1896," published by the French Ministry of Colonies, the imports from Great Britain and British possessions into Madagascar are estimated at a value of 222,595*l.*,

* The duties on cotton textiles per 100 kilos. are as follows:—

Weight per 100 Metres.	Number of Threads in 5 Millimetres Square.	Amount.
		Francs.
Above 13 kilos.	35 and below	77
	36 above	118
From 11 to 13 kilos. ..	35 below	87
	36 above	131
9 11 „ ..	35 below	111
	36 above	172
7 9 „ ..	35 below	131
	36 above	230
5 7 „ ..	35 below	139
	36 above	300
3 5 „ ..	35 below	287
	36 above	550
Less than 3 kilos.	..	620

no mention of Manila being made. The same publication also places the imports from the United States at over 90,000*l.*, of which almost 80,000*l.* are due to the cotton textile trade. This circumstance is, however, accounted for by the fact that both during that and the following year a very large proportion of the American goods were imported viâ England.

Value of imports, 1897.

The year 1897 marked the transition stage between the old and the new systems. The total imports for that year were estimated at 727,085*l.** Of this amount the trade of France and her colonies absorbed 411,952*l.*,† including textiles to a value of 140,925*l.* Thus imports from French sources increased during that year by 193,546*l.* over 1896. In that year the trade with the British Empire in general is made to include a special item for Mauritius of 14,615*l.* out of a total of 206,624*l.*, whilst Mauritius is also separately credited with imports to the value of 38,445*l.* The value of British cotton textiles appears to have been 116,629*l.* The comparatively slight difference in this respect between 1896 and 1897 is due to the fact that merchants trading with the United Kingdom were able to accumulate a large stock of cotton goods before the new duties came into force. Imports from Germany were valued at 32,442*l.*, and those from the United States at 6,304*l.*, plus about 88,000*l.* worth of textiles imported viâ England. It will thus be observed that though France profited very considerably, British and American trade continued to hold their own up to a certain point, as far as cotton textiles were concerned, notwithstanding the fact that the new duties, in their first form, were in force during almost the whole of the latter half of 1897.

Foreign countries.

Effect of new tariff.

In 1898 the new tariff began to show its real effect. The statistics for that year are as a whole found in General Gallieni's report, whilst the classification of the trade, according to types of merchandise, has just reached France in the "Annuaire de Madagascar" for 1899. The figures given in the text are mostly drawn from General Gallieni's report. These are, as net totals, admitted not to be absolutely exact. Such serious discrepancies are, however, to be noticed between them and the figures published in the "Annuaire," particularly as regards the British cotton textile trade, that it is impossible to arrive at any exact appreciation. It need only be remarked that, according to the "Annuaire," the cotton textiles imported from Great Britain and British colonies in 1898 amounted to a little over 17,000*l.*

Out of a total import trade of 857,069*l.* France and her colonies provided goods to a value of 640,316*l.*, including textiles to the value of 247,366*l.* The net increase of imports from France and

* General Gallieni's report gives 15,558,918 fr. as the total value of imports. This is, however, manifestly a typographical error. The "Emigrants Guide" published under his supervision and the report on the Colonial Budget for 1899 both give 18,358,918 fr. as the figure.

† The above figures are taken from General Gallieni's report; those in Table I from the report on the Colonial Budget for 1899. This publication shows a somewhat larger proportion of the imports during 1897 as being of foreign origin.

her colonies as compared to 1897 amounted to 228,364*l.* The whole of the imports from foreign countries amounted to only 216,753*l.*, whilst Great Britain and her colonies' share of the trade of the colony was estimated at 94,851*l.*, including cotton textiles to a value of 29,306*l.* The imports from Germany for the year were valued at slightly over 40,000*l.*

Comparison of 1896 and 1898.

On comparing the years 1896 and 1898 it will be found that British trade, taking the figures given by General Gallieni as basis for the first year, has fallen off by about 46·6 per cent., or, if the figures published by the Ministry of Colonies be taken, by 57·3 per cent., whilst the British cotton textile trade has diminished by about 77·2 per cent., and even a far higher percentage of decrease must be counted if the above-mentioned "Annuaire de Madagascar" figures be accepted as correct.

The following table shows the value of British goods imported for each of the five years 1894–98 according to the statistics lately published by the British customs authorities:—

IMPORTS from the United Kingdom, 1894–98.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Apparel and haberdashery	1,598	1,771	1,972	2,644	5,702
Biscuit and bread	415	529	1,051	2,045	685
Coal, cinders and fuel	1,203	165	2,865	10,487	8,261
Cottons, entered by the yard	92,896	43,352	110,492	108,080	4,859
,, ,, at value	4,509	2,520	6,169	3,777	1,382
Machinery and millwork	1,055	224	2,077	6,737	490
Metals: iron, wrought and unwrought ...	6,347	7,223	8,155	6,061	7,024
Milk, condensed	383	1,015	195	177	...
Provisions (including meat)	1,213	1,255	1,358	1,427	410
Stationery, other than paper	1,002	857	1,311	2,106	490
Parcel post ... ... (Number)	129	84	89	186	48
All other articles	11,187	7,405	11,232	14,883	5,353
Total	121,937	66,400	146,966	158,610	34,604

Exports.

The principal exports from Madagascar are rubber, hides, rafia, cattle, wax, vanilla, gold, preserved meats, and timber.

Value, 1896.

The export trade, however, is not nearly so important as the import trade. Its value in 1896 was 142,809*l.* Of this, 41,852*l.* worth of products went to France and French colonies and 100,957*l.* to other countries, the share of the United Kingdom in the latter amounting to 61,075*l.* In 1897 the general exports had increased to 172,976*l.*,* notwithstanding the disturbed condition of certain parts of the island. France and her colonies received 60,061*l.* worth of produce and foreign countries 112,915*l.* The exports to the United Kingdom in particular attained a value of 54,848*l.*, a falling-off as compared with the previous year of 6,227*l.* The exports from Madagascar to Germany amounted to 45,644*l.*, and showed, on the contrary, an increase of over 20,000*l.* In 1898 the value of the produce exported had further risen to 196,435*l.*, whilst the exports to France and her colonies had reached a maximum of 89,584*l.* In considering

The United Kingdom.

Other countries.

* Figures taken from General Gallieni's Report.

these figures it must, however, be borne in mind that the present year (1899) is the first during which the island has been in a tranquil state, and that should it continue so it is not improbable that the immediate future may show a much more accentuated rate of increase.

According to the British Customs returns the exports from Madagascar to the United Kingdom for the five years ending in 1898 were as follows:—

EXPORTS to the United Kingdom, 1894–98.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Caoutchouc	70,397	55,006	42,868	12,137	10,306
Drugs, unenumerated	1,223	1,581	668	4,126	2,821
Gum, of all sorts	745	597	282	488	280
Hemp, dressed or undressed	...	...	...	927	...
,, other similar vegetable substances, unenumerated	21,834	37,680	16,686	14,372	2,803
Hides, raw	18,172	17,895	12,190	10,052	1,742
Nuts and kernels, for expressing oil therefrom	...	2,821	...	...	...
Skins, goat, undressed	40	408	185	1,194	...
,, sheep, undressed	1,709	1,505	1,062	955	...
Sugar, unrefined	2,034	576	...	...	...
Wax	12,577	17,410	14,203	17,704	9,005
Wood: furniture woods and hard woods (except mahogany)	290	530	900	1,112	...
All other articles	8,571	2,996	3,511	4,792	3,923
Total	137,592	139,005	92,535	67,859	30,880

Development of export trade.

As regards the commodities already mentioned as the chief exports, the quantity of rubber exported in 1898 was about 25 per cent. less than that shipped in 1896, though, owing to the rise in prices the value had only sunk by about 1,400*l.* Notwithstanding the adverse circumstances already referred to the exportation of live-stock shows, during the three years under consideration, a steady increase both as regards quantity and value. The cattle are principally sent to the Transvaal, to Réunion, to Mauritius, and to Mozambique. Timber has also increased steadily, though the amount shipped is still very small, its value being, for 1896, about 3,000*l.*, and for 1898 about 5,000*l.* The quantity of wax exported in 1897 was slightly greater than in 1896, whilst the value increased very considerably. In 1898, on the other hand, there was a serious diminution in quantity, though the value, proportionately, appears to have remained about stationary. The number of hides shipped had decreased continuously. In 1897 the value was also lower than in 1896, but in 1898, owing to the fact that a much greater proportion of large skins was exported, it had again risen considerably. The gold output appears to have grown though still very small. The preserved meat industry, though only reaching a total export value of about 15,600*l.*, has grown rapidly. Rafia, in 1897, had fallen off very considerably in quantity as compared with 1896, though higher prices reigned. In 1898 a recovery in quantity took place

accompanied, however, by a falling-off in value. The exportation of vanilla was three times as great in 1897 as in 1896 both as regards quantity and value. In 1898 the quantity had, in comparison with the previous year, decreased slightly, and the value showed a serious diminution.

Shipping movement.

The total shipping movement of Malagasy ports in 1897 amounted to 3,691 vessels with a tonnage of 827,531 tons. The vessels flying the French flag numbered 2,069 and their tonnage was 604,194 tons; the British, 1,477 vessels with a tonnage of 169,249 tons; and the German 99 vessels with a tonnage of 42,127 tons. In 1898 the number of vessels had increased to 6,061, whilst the total tonnage had only grown to 879,362 tons. During that year the French flag was borne by 3,497 ships of a total burthen of 734,068 tons. The British ships were 2,186 in number and their tonnage 78,053 tons, and the German 111 with a tonnage of 39,305 tons. It is not mentioned in General Gallieni's report from which these figures are extracted whether purely coasting trade is included.

In 1896 the value of goods imported under different flags was as follows:—French, 7,200,000 fr.; British, 5,900,000 fr.; German, 600,000 fr. In 1897 the figures were: French, 11,600,000 fr.; British, 5,200,000 fr.; German, 1,100,000 fr. The remainder of the imports were made in Norwegian, Arab, Danish, Swedish, and American bottoms. In the matter of exports the values were: French, 1,700,000 fr.; British, 1,500,000 fr.; German, 300,000 fr.; and in 1897: French, 2,300,000 fr.; British, 800,000 fr.; German, 1,100,000 fr. Neither for exports nor for imports are similar figures for 1898 available. From the tonnage statistics given above, however, it would appear that the shipping trade is fast becoming a French monopoly. Communication with Europe is, in the main, secured by three French lines: the Messageries Maritimes, the Havre Peninsular, and the Chargeurs Réunis. It is incidentally mentioned in General Gallieni's report that the Castle line ceased its operations in 1898, and the Deutsch Ost Afrika steamers now only touch rarely at Malagasy ports.

Freights.

The freights from Bordeaux to Tamatave and Majunga are 40 fr., plus 10 per cent. per cubic metre, or per 700 kilos. The Chargeurs Réunis Line charge, from Havre to Fort Dauphin, Mananjary, and Vatomandry, 60 fr., plus 10 per cent.; and to Tamatave, 40 fr., plus 10 per cent. per cubic metre, or 700 kilos.; whilst the rates quoted from Marseilles are 50 fr. per cubic metre, or per ton, equally to Nossi-Bé, Diego Suarez, Tamatave, and Majunga.

Administrative measures for furtherance of trade.

During the last two years the Governor-General has taken a number of steps with a view to promote the general commercial activity of the colony. Consultative Chambers of Commerce, destined to keep the Administration informed regarding economic matters, have been instituted in various centres. The hitherto somewhat severe forest laws have, in certain regions, been allowed to fall partially into abeyance. In order to foster internal trade, many of the markets which existed previous to the late insur-

rection have been re-established. Finally, for the protection of European commerce against Asiatic and African competition, from which it has suffered rather severely, a system of special licenses for traders of these descriptions has been introduced.

Commercial situation.

M. Henri Pensa, a well-known writer on colonial matters, calls attention in a recent number of the "Revue Politique et Parlementaire" to the divergent views held with regard to the present commercial situation of Madagascar. He quotes in the first place the opinions of two French business men, who maintain that the pacification of the island is far from complete, and that the plague and the absence of practicable roads put a stop to the possibility of successful trading. "A dire vrai, l'administration coloniale n'aboutit à rien, ni à la pacification, ni à la création d'un réseau de routes, ni à la concession ou à l'entreprise de voies ferrées, ni même à l'établissement d'un ensemble de lois et réglements sur lesquels on pourrait compter. . . . . Quant aux mines d'or et aux autres mines, n'en parlez plus."

In contra-distinction to this melancholy outlook, M. Pensa quotes the opinion of an official who considers the island now to be entirely pacified, but this he adds is not the opinion of the British Vice-Consul, who in his last report describes the trade of Madagascar as "alarmingly poor," owing to a variety of reasons. In his report recently published, Mr. Turner, Acting Vice-Consul at Antananarivo, writes that over-importation, increased competition, impoverished condition of the natives as the natural result of war, rebellion, famine, forced labour, taxes, and the reaction of the market after a term of fictitious prices serve to make up a "tout ensemble" which explains the present situation. The prices of most of the former staple articles of merchandise are now prohibitive on account of the heavy protective duties, while on the other hand, French made goods are dear, and not in good demand.

Referring to agriculture, Mr. Turner says that there is no doubt whatever that the soil of Madagascar has been overpraised. The rapidity with which certain forms of vegetation spring up luxuriantly, is due rather to the forcing power of the climate than to any special richness of the soil; and in conclusion he says that Madagascar is fairly rich in minerals, but the French mode of extracting them from the earth does not commend itself to people who have been accustomed to Transvaal, Australian and American methods.

Economic future.

In his forecast of the economic future of the island, General Gallieni, whilst discounting dreams of inordinate wealth, deems the hope of reasonable prosperity fully justified. Owing to its physical conformation he finds Madagascar eminently suited for diverse types of colonists. At the same time he lays great stress on the paramount importance of the labour question, advocating the introduction into general use of the simpler kinds of agricultural machinery. He further mentions sheep-farming as an industry capable of considerable development. With regard to the progress made by French trade in particular, he remarks:—

"Our manufacturers and merchants have given proof of real initiative. Happily seconded by the protective measures taken by the Government, the first have transformed their machinery in order to manufacture textiles in keeping with the native taste, whilst the second have founded important establishments in Madagascar which appear satisfied with the results of their operations. It is true that beside these there are merchants who complain of the stagnation of trade; these, for the most part, being grouped together in the great centres, Tamatave, Majunga, Tananarivo Mananjary, Vatomandry, are present in numbers out of proportion with the commercial capabilities of the region, because their want of resources confines their operations to too narrow a circle. This, however, does not diminish the value of the results attained. In the matter of imports, France to-day holds the first place in Madagascar, and her market there is worth 16,000,000 fr."*

COMORO ISLANDS.

The importance of the Comoro Islands rests more upon the value of their position at the mouth of the Straits of Mozambique from a strategic point of view than upon their commercial worth, which at present is extremely small.

The archipelago, besides a number of islets, includes Mayotte, the Great Comoro, Moheli, and Anjouan. Mayotte has been a French colony since 1843, whilst the remaining three became French Protectorates, administered by the Governor of Mayotte, in virtue of the Treaties of January 6, and April 21 and 26, 1886.

Area and population.

According to M. Petit's "Organisation des Colonies Françaises" the area of Mayotte is 366 square kiloms., that of the Great Comoro, 1,002 square kiloms.; that of Moheli, 231 square kiloms.; and that of Anjouan, 373 square kiloms.; whilst the respective populations are, nearly, 9,000, 50,000, 9,000, and 12,000. There are but few European residents, the inhabitants being mostly of Malagasy, Negro, and Arab blood. Whilst Mayotte has long been entirely subjected to French dominion, the inhabitants of the other islands, encouraged, no doubt, by their nominal chiefs, the Sultans, have shown a turbulent spirit which has frequently necessitated the armed intervention of the French authorities.

Climate, &c.

Neither from an economic nor from a general point of view is there much to be said about this small group of islands. The climate is similar to that of their important neighbour, Madagascar, and they are mountainous and of volcanic origin. The chief industry is found in the production of sugar, which, however, does not reach any very marked development. There is only one port worthy of note, which is at Dzaudai, the seat of government, situated upon a small island opposite M'sapéré, the

* "Journal Officiel," June 3, 1899.

principal commercial centre on the mainland of Mayotte. Beyond this there are none but mere creeks suited only to vessels of very light draught.

Local and Colonial Budgets.

The collective receipts and expenditure of the local budgets of the four islands were estimated, for 1899, to balance at a little under 20,000*l.* Mayotte appears also in the Colonial Budget estimates for the same year for a sum of 1,780*l.*

Trade.

Whilst M. Petit remarks that these islands will undoubtedly attract French capital when their resources become better known in the mother country, their commercial value appears insignificant at present, and the statistical information with regard to trade is of a somewhat meagre description. It is to be presumed that the trade of the whole group is included in the figures given in French statistics under the heading "Mayotte."

Imports. 1888 and 1896.

The principal imports are textiles, flour, hardware, firearms, &c. In 1888 the value of imports was 21,027*l.* Of this amount France and her colonies provided goods worth 9,372*l.*, whilst the trade with foreign countries was estimated at 11,655*l.* In 1896, the latest year for which complete figures are available, the situation was reversed, as the imports from France and her colonies reached a value of 20,793*l.*, and those from foreign countries only a value of 5,841*l.* out of a total of 26,634*l.* Thus it will be seen that, whilst the whole import trade had increased during the nine years by 5,607*l.*, that of France and her colonies had risen by no less than 11,421*l.*, and that of foreign countries had, on the contrary, decreased by 5,814*l.*, or nearly 50 per cent. No detailed statistics have been issued enabling the trade of the United Kingdom with these islands to be ascertained.

1898.

The "Office Colonial" has lately published the returns for the last 10 months of 1898, those of the first two months being stated to have been lost in a cyclone which visited the islands early in the year. According to these figures, in the ten months the imports from France and French colonies were worth 10,572*l.*, and those from foreign countries 4,964*l.*, making a total of 15,536*l.*, which, admitting the imports of the first two months to have been in proportion, would give a total for the year of about 18,125*l.*, or a notable decline since 1896.

Exports. 1888 and 1896.

The principal products exported are sugar (averaging, in ordinary years, from 6,000 to 8,000 tons per annum), vanilla, rum, coffee, and hides (mainly from Anjouan). In 1888 the value of exports was: to France and her colonies, 37,021*l.*; to foreign countries, 4,265*l.*, making together a total of 41,286*l.* In 1896 the corresponding figures were: total, 47,757*l.*; France and French colonies, 46,564*l.*; and foreign countries, 1,193*l.* The general export trade of the colony had, therefore, risen in value during the nine years by 6,471*l.*, and that with France and French colonies by 9,543*l.*, or more than 25 per cent.; whilst that with foreign countries had fallen off by 3,072*l.*, or about 72 per cent.

1898.

The figures for the last 10 months of 1898, which alone are available, show the exports during that period to have been worth 33,478*l.* The comparison made use of in the case of

imports cannot be instituted in this case, as the exports consisting mainly of agricultural products, it is probable that the cyclone mentioned above was responsible for a considerable diminution.

To sum up it may be said that French trade, in this as in other colonies, appears to be superseding that of all other countries.

French Somaliland.

Value as coaling station.

The port of Obock was acquired by the French from the Sultan of Tajourah in 1862 by purchase, but it was not until 1884 that the possession was turned to any practical account, it being made a coaling station for French vessels on their way to the Far East. It was also in 1884 that the French Protectorate over Tajourah and the neighbouring districts was established.

Frontiers.

The frontier between British and French Somalilands runs inland from the Wells of Hadu, between Zeila and Djibouti, in the direction of Harrar, an important Ethiopian centre of trade between the coast and the interior. The other frontiers, namely, to the south, towards the Galla country; to the west, towards the Shoa Highlands and Abyssinia proper; and to the north, towards Erythrea, do not appear to be very distinctly defined, except in the case of the latter, where on the coast the limit of French influence is Cape Dumeira at the entrance to the Straits of Bab el Mandeb.

Area and population.

The area of the French sphere of influence is roughly estimated at about 120,000 square kiloms., and its population variously calculated at from 50,000 to 200,000, whilst the territory actually administered as a colony is 12,000 square kiloms. in extent, and has a population of 22,000. Its present value appears to depend more upon its situation from a political point of view than upon its economic capabilities. The possession of the Gulf of Tajourah insures to France a certain amount of political influence at the entrance to the Red Sea. As yet, however, little seems to have been done to develop the colony in this respect, although it is stated in the report on the Colonial Budget for 1899 that a sum of about 7,000,000 fr. has already been expended there.

Present capital.

The seat of Government has, comparatively recently, been transferred from Obock to Djibouti on the southern shore of the Gulf of Tajourah. This change has been effected mainly on account of the greater harbour facilities which are afforded by the latter place. The town has grown somewhat rapidly since, and though it has only been in existence for about five years, it already boasts a population of 13,000, including 1,000 Europeans. It has also become the head of one amongst the various caravan routes between Harrar and the coast.

Trade.

With regard to the general trade of French Somaliland, no French statistics are available. Commercial relations, both by sea and with the interior, are still in their infancy, and by far the

greater part of the exports and imports of the hinterland pass through Zeila, Berbera, and Bulhar, in British Somaliland.

Djibouti-Harrar Railway.

Two factors, however, appear likely to assist Djibouti in competing with these ports in the future. The first and most important is the construction of the railway to Harrar. The second is the building at Djibouti of a jetty 800 metres long, of which a good part has already been completed. The railway is being constructed by the Compagnie Internationale des Chemins de Fer Ethiopiens, with a share capital of 320,000*l.*, and an obligation capital of the nominal amount of 1,500,000*l.*, which, it is stated, will be sufficient for the construction of the railway from Djibouti to a point at the foot of a hill 70 kiloms. from Harrar. The rails have already been laid as far as kilom. 52, the bridge at Holl-Holl should be completed by December 1, and the line laid to kilom. 103 by January 31, 1900. According to the statements made by the company's officials, the line should be entirely finished by the end of 1900.

The following tables, lately published in the "Annual Statement of the Trade of the United Kingdom with Foreign Countries," form the only available information with regard to the exports and imports of French East Africa, and embrace the value of the commerce with Great Britain alone:—

BRITISH Trade, 1894–98.

IMPORTS into the United Kingdom.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Total value	...	...	290	436	...

EXPORTS from the United Kingdom.

PRODUCE and Manufactures of the United Kingdom.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Arms, ammunition, and military stores ..	...	18	...	1,412	3,658
Coal, cinders, and fuel	2,113	2,318	...	...	7,356
Cotton manufactures, entered by the yard	...	...	220	211	2,030
Cotton manufactures, entered at value ...	...	...	...	186	178
Metals: iron, wrought and unwrought ...	...	1,049	...	16	16,657
All other articles	35	450	...	52	192
Total	2,148	3,835	220	1,877	30,071

Whatever may be the eventual development of commercial relations with Shoa, Harrar, and the Galla country, it may safely be said that the protectorate is but little suited to colonisation in the ordinary acceptation of the term by reason of the climate and the aridity of the soil in the neighbourhood of the coast.

Administration.

The administration of the country is, according to the latest figures, in the hands of 18 officials. It has just been decided to nominate a special governor, an innovation which does away with the combination of this post with that of diplomatic representative at the Court of Abyssinia. As a consequence of this change the subsidy granted by the mother country to the colony has for the present year been reduced from about 22,000*l.* to about 16,000*l.*

Means of communication.

Communication with France is secured by means of the East African Messageries Maritimes Line, and by the same company's steamers plying to the Far East. The freights from Marseilles to Djibouti are 35 fr. per cubic metre, or ton. Goods weighing more than 1,000 kilos. per cubic metre are liable to an extra rate of 10 fr. per cubic metre.

Customs tariff.

A general system of taxation, including a new customs tariff, was put in force on May 1, 1899. Duties are now levied on spirits at the rate of 30 fr. per hectolitre for liquors under 50 degrees, 50 fr. from 50 to 70 degrees, and 100 fr. for liquors of 70 degrees and upwards. Wines also pay duties varying according to the quality. Rice, flour, dates, oil, and petroleum pay 2 fr., durah and cereals, 1 fr.; manufactured tobacco, 25 fr.; raw tobacco and haschich, 10 fr.; all per 100 kilos.

Export dues are now levied on camels, 12 fr. per head; horses and mules, 16 fr. per head; donkeys, 6 fr. per head; oxen, 2 fr. per head, &c.; besides which, hides (except those sent to France) pay 50 fr. per 100.

*Réunion.**

Area and population.

Chief centres.

The island of Réunion has been occupied by the French since the year 1638, and ranks, therefore, with Guiana and the French West Indies, amongst the older colonies dating from the first phase of French colonial enterprise. Its area is 2,600 square kiloms. and its population numbers about 170,000, being represented in the French Chamber by two deputies. The administrative capital and chief centre is St. Denis with about 30,000 inhabitants, whilst the other most important towns are St. Paul, St. Pierre, St. Louis, and St. Benoist, with populations varying from 26,500 to 11,500. The administrative division of the island consists of two "arrondissements" and nine "cantons" which are again subdivided into a number of communes and districts.

Number of officials, &c.

The total number of officials of all classes is 904 amongst whom 24 hold distinctly administrative posts. The number of troops is 484.

Colonial and Local Budget.

The total expenditure on the colony by the Home Government is set down in the French Colonial Budget for 1899 at 178,809*l.*, against which, however, must be placed a sum of nearly 5,500*l.* paid out of local revenue to the mother country. The state of the Local Government finances is extremely satisfactory. The local ordinary expenditure for 1898 was estimated at 147,635*l.* Thus, 320,000*l.* may be taken as in round number the annual average of the total expenditure. This represents nearly 2*l.* per head of the population.

* The latest information with regard to the trade of Réunion will be found in Mr. Consul Bennett's Report for 1898, No. 2350 Annual Series.

With regard to the civil and police expenditure borne by the Home Government which amounts to about 35,000*l.*, it is proposed to transfer it to the Local Budget which will be relieved of the payment to the Colonial Budget and receive a direct subsidy of about 13,600*l.* The net increase of local expenditure proposed is therefore in round numbers between 15,000*l.* and 16,000*l.*

Railway and port.

One of the principal sources of expenditure lies in the subsidies required by the railway and port. During the last 11 years the payments by the Home Government under this head have averaged about 100,000*l.* per annum, whilst the charge in the Local Budget amounts to 6,336*l.* The need both for the railway and the port was undoubtedly very great. Of natural harbours, not a single one of any importance appears to exist, and all vessels were obliged to lie in the open roadstead loading and discharging by means of lighters, &c. The internal means of communication were equally bad. The island is very mountainous, and intersected by the beds of numerous torrents which rendered the various centres well nigh inaccessible and enhanced the cost of transport enormously. Under these circumstances it was decided in 1877 to make a port at Pointe des Galets and to construct a railway 127 kiloms. long from St. Pierre to St. Benoist viâ St. Denis, covering, along the coast, about three-fifths of the whole circumference of the island. The enterprise was entrusted to a company. The original expenditure of this company amounted to about 61,000,000 fr., the French Government guaranteeing the interest on the portion borrowed to the extent of about 100,000*l.* per annum. The railway was opened in 1882 and the port in 1886, but in 1887 the State was obliged to take over both and has worked them since at a very considerable loss. In the Special Budget for 1899 the expenses are estimated at 180,930*l.*, whilst the receipts are only expected to reach 75,247*l.* One of the chief difficulties which lies in the way of the successful development of this undertaking is the continued existence of the numerous landing stages round the coast, and it is hoped that, by gradually buying out the authorised owners of these constructions, the receipts may eventually be made to attain a more satisfactory figure.

General economic situation.

The general economic situation of Réunion presents many points of similarity to that existing in the French West Indian Islands. Here also sugar is the staple product and the colony has consequently suffered greatly from the crisis in that industry. It would, however, appear that the refiners rather than the planters have sustained the most serious losses. The latter in Réunion have devoted more attention to the growing of "secondary crops" than has been the case in the West Indian Islands.

Value of imports, 1888-97.

In 1888 the value of imports into Réunion was 891,722*l.* divided as follows:—France and French colonies, 381,804*l.*; other countries, 509,918*l.* In 1897 out of a total value of 857,888*l.*, the goods from France and French colonies amounted to 596,619*l.* and those from other countries 261,269*l.* In view of the considerable variations which had taken place in the value of the import trade

during the last four of the intervening years it may safely be said that the total value of imports had remained stationary, the most notable fact being the practical reversal of the origin of the major part of the merchandise. The detailed French statistics for 1896 show the principal imports to have been:—cereals and flour, 245,000*l.*; textiles, 110,000*l.*; spirits, 91,000*l.*; animal products, 87,000*l.*; metal goods, 50,000*l.*; and dried and salted fish, 35,000*l.* The above values are approximate. No special French figures with regard to imports from the United Kingdom are available. **Principal imports, 1896.**

A few comparative figures with regard to the quantities of the various colonial products exported in 1896 and 1897 respectively are given in the "Quinzaine Coloniale." The exportation of sugar which was about 45,000,000 kilos. during the season 1896–97 only reached 31,000,000 kilos. in 1897–98. A somewhat higher average price, however, in a measure compensated for the lower figure. Most of the so-called secondary exports showed a decided advance. Vanilla increased from about 69,000 kilos. to nearly 100,000 kilos. Coffee from nearly 45,000 kilos. to nearly 83,000 kilos. With regard to this product the local consumption is stated to be far more important than the export trade. The average price of coffee is about 3 fr. the kilo. Tapioca had increased, and the same could be said of potatoes in which a considerable trade is done with Mauritius. On the other hand tobacco and essential oils for perfumery had fallen-off. **Quantities of products exported, 1896-97.**

The total value of exports from Réunion in 1888 was 616,771*l.* of which products to the value of 463,963*l.* were sent to France and French colonies, and 152,808*l.* to foreign countries. In 1897 the figures were respectively 731,980*l.*, 714,900*l.*, and 17,080*l.* It will, therefore, be observed that the total export trade had increased in the 10 years by 115,209*l.*, and that with France and French colonies by 250,937*l.*, whilst that with foreign countries had diminished by no less than 135,728*l.* It may be noted that the imports from foreign countries, though greatly decreased, did not fall off in nearly as great a proportion as the exports to the same. The general improvement in most of the staple exports has already been mentioned. It therefore only remains to indicate the approximate values according to the statistics for 1896. These were:—sugar, 420,000*l.*; rum, 34,000*l.*; tapioca, 28,000*l.*; vanilla, 21,000*l.*; essential oils, 18,800*l.*; cloves, 9,800*l.*; and coffee, 5,500*l.* **Value of exports, 1888–97.** **Principal exports, 1896.**

The subjoined tables extracted from the "Statement of the Trade of the United Kingdom" for 1898, will serve to show the value according to British statistics of the trade of the United Kingdom with Réunion during the last five years.

The local financial situation can only be judged by the condition of affairs at the Colonial Bank of Réunion. This establishment has passed through a very severe crisis, but its position appears to be slightly improving. The rate of interest charged varies according to the transaction from 6 to 9 per cent. the average being about 8 per cent. **Réunion Colonial Bank.**

As a general rule the colony is subject to the French customs

tariff. Live-stock, cereals, and flour, fresh and salted meats, vegetable oils, timber, mineral combustibles, and oils and one or two other less important classes of goods are imported free of duty, whilst teas and certain spices only pay half the regular French rate. Manufacturers alone may import raw tobacco, paying 250 fr. per 100 kilos.

Customs tariff.

A general 2 per cent. *ad valorem* export duty is levied on all local products.

Freights.

The freight charged from Bordeaux to Réunion is 60 fr. plus 10 per cent. per metric ton.

British trade, 1894–98.

BRITISH Trade with Réunion, 1894–98.

IMPORTS into the United Kingdom.

	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Total value	..	7	..	200	1,055

EXPORTS from the United Kingdom.

PRODUCE and Manufactures of the United Kingdom.

Principal and other Articles.	Value.				
	1894.	1895.	1896.	1897.	1898.
	£	£	£	£	£
Coal, cinders, and fuel	3,252	..	..	..	..
Cottons, entered by the yard ..	2,188	1,507	1,572	1,681	603
,, ,, at value ..	362	335	455	223	231
Machinery and mill work ..	..	..	3	1,146	1,446
Manure	44	115	728	170	278
Metals: iron, wrought and unwrought	365	436	511	628	224
Soap	845	833	2,184	766	332
Parcel post	..	6	1	7	2
All other articles	55	928	1,527	2,018	1,337
Total	7,111	4,160	6,981	6,639	4,453

IV.—OCEANIA.

New Caledonia.

Area and population.

The island of New Caledonia was first occupied by the French in the year 1853 and from 1864 forward was, for some time, principally known as the second of the two important French convict

settlements. It is one of the larger of the islands in the southern Pacific and has an area of 21,023 square kiloms., whilst its population, according to the latest official figures dating from 1889, is 62,752. It is, however, probable that the number of inhabitants has, by this time, somewhat increased as there is a fairly steady, though small, flow of immigration. A certain number of smaller islands in the immediate, or remoter, neighbourhood, are for administrative purposes attached to New Caledonia.

Chief centres. The principal centres are, Noumea, the seat of government, which possesses a good harbour, Bourail, the most important amongst the penal establishments, Foa and Canala, districts in which agriculture is said to be progressing steadily, the Diahot Valley, containing copper and cobalt mines, and Urio, which is well known on account of its nickel mines.

Colonial Budget. The colony appears in the 1899 Colonial Budget estimates for a sum of about 287,500*l.* Of this, however, about 170,000*l.* represents the costs of the penal settlements, and cannot consequently, as has already been remarked in speaking of French Guiana, be looked upon as colonial expenditure in the strict sense of the term. The actual cost of the colony to the mother country during the year is estimated, therefore, in round numbers at 117,500*l.*, but is reduced by some 3,500*l.* by reason of payments made to the Home Government. The estimated ordinary expenditure in the Local Budget for 1898 was 96,750*l.*

Local Budget.

The estimates for the present year are somewhat higher both as regards revenue and expenditure, the former partly by reason of a new capitation tax which has been imposed upon the natives. The total annual expenditure in both Budgets, on account of the colony, may be taken at about 210,000*l.* or somewhat over 3*l.* per head of the population, in the European portion of which it is probable that the military and official elements, together with the convicts and the functionaries connected with the penal settlements, form a not unimportant section.

Number of officials. The officials in charge of the convict establishments would appear to be separate and distinct from those administering the colony itself, who number 372 and include 25 holding governmental posts in the strict sense. The troops according to a table contained in the Budget for 1899 number 979.

Economic value. If the size of New Caledonia, in comparison to some other French colonies, be taken into consideration, it may be said to rank as one of the most valuable of French possessions. Whatever may be the eventual development of the vaster territories acquired by France of late years, this island certainly possesses many of the requisites for successful European colonisation.

Hindrances to development The two great difficulties which have been noticed in other cases are here quite as serious, if not more serious, than elsewhere. The means of communication are most inadequate and the supply of suitable labour quite unequal to the growing needs of the colony. Whilst the latter question is undoubtedly of the greatest importance as regards the development of New Caledonia as what

may be termed an "immigration colony," the former appears for the moment to hold the first rank. The island, as will be seen hereafter, possesses very considerable mineral wealth, the profitable working of which is greatly hindered by the cost of transport and shipping.

A summary of an interesting report dealing with the question of means of communication is published in a comparatively recent number of the "Quinzaine Coloniale." The report is based upon the proposal that the colony should effect a loan of 10,000,000 fr. with a view to building a railway and providing the port of Noumea with a dry dock, wharf, &c. The expenses connected with this latter section of the proposal are estimated at about 4,500,000 fr., and it is very clearly demonstrated that the enterprise would probably prove a financial success. It is also thought that a great point in its favour would lie in the providing, for French warships in these latitudes, of a suitable dry dock in which they could undergo all necessary repairs which must at present be made either in Australia or New Zealand. With regard to the wharf in particular, it may be mentioned that the Messageries Maritimes Company proposed, a short time ago, on certain conditions, to build it at its own expense. The conditions proposed do not, however, appear to have been acceptable to the local authorities.

Projected port improvements Noumea.

A number of roadsteads and a few natural harbours exist along the coast at which, however, all loading and discharging has to be performed by means of lighters. A first-class port is therefore essential. But, from a general point of view the railway question seems to hold an even more prominent place. The island is almost entirely surrounded by reefs, and whilst navigation between them and the mainland is perfectly feasible on the east coast, it is attended by many difficulties on the west. Further the mountainous character of New Caledonia as a whole constitutes a serious impediment to the construction of ordinary roads on an extensive scale and renders the various centres somewhat inaccessible.

Railway scheme.

The length of the island being far greater than its breadth the main question has always been whether the railway system should take the form of a number of transversal lines or one main line down the centre. The report from which the present information is principally drawn is decidedly in favour of the latter scheme. It does not, however, pre-suppose that more than a section of the railroad can be constructed at present, and it may even be said that the whole enterprise has, as yet, not got beyond the problematic stage. That such a railway would be of inestimable value in furthering the development of this rich island is a fact which can scarcely be doubted.

Mineral wealth.

In the northern portion of the island copper is said to abound. Five English companies have of late years been formed to work the mines, each having a large capital. A railway is now being constructed to bring down to the water edge the output of the mines, and it is expected that within a short time the production of copper will be greatly increased. Zinc ores, containing lead, silver,

and gold-bearing quartz, are also found. In the South, nickel is mined in quarries by English and French companies. Iron ore exists in great quantities, but as yet very little has been exported. Chrome has been largely shipped, and is found everywhere. Cobalt ore is also found, but the shipments are as yet comparatively trifling owing to the small requirements for consumption. Of late two companies have been formed to work the pearl fisheries, one with French capital, and the other by a Sydney Company.

The following table shows the quantities of minerals exported during the year 1898:— **Export of minerals.**

	Quantity.
	Kilos.
Ore—	
Auriferous	910
Iron	20,000
Copper	4,977
Lead	250
Nickel	10,578,200
Cobalt	2,222,166
Chrome	7,711,855

It is estimated that the economy, resultant from the building of the railway, in the transport rates from the mines to Noumea would average about 60 per cent., and, as the mineral riches are said not to have been worked to their full extent, it seems likely that the output could, under more favourable circumstances, be greatly increased. The drawback is, as usual, of a financial order. Without the guarantee of the Home Government the colony could not obtain even the loan of 10,000,000 fr. at present under consideration at a rate of less than 8 per cent. per annum including the requirements of the sinking fund.

If the mining question be set aside the general progress of the colony, though on the whole satisfactory, appears to be somewhat slow. The soil is, for the most part, of good quality. But, whilst the climate is healthy, the occasional droughts and hurricanes seem to do much harm to the crops of which coffee, up to the present, is by far the most important and steadily progressive. Vanilla, the vine, wheat, manioc, &c., have also been cultivated with a certain amount of success though hitherto on a more or less experimental footing. The breeding of cattle appears to be a source of future wealth and a comparatively important export trade is already done in preserved meats. **Colonisation.** **Agricultural products.**

The existence of the penal establishments is regarded with decided disfavour by the free colonists who are also the chief sufferers from the already-mentioned labour question.

It is difficult to arrive either at the exact number of colonists in New Caledonia or the increase or diminution of the flow of immigration. According to an article in the "Quinzaine Coloniale" of May 25, 1898, the number of families which had settled there between June, 1895, and January, 1898, was 195. **Number of colonists.**

To these, however, must be added 17 Americans, 30 discharged soldiers, and 10 officials who had also taken up the free grants which form one of the great attractions. On the other hand about 10 per cent. of the total of the above number had left during the same period.

Value of imports, 1888 and 1897.

In the matter of imports French and colonial trade is here as in most other cases profiting at the expense of the foreign. In 1888 the value of the goods imported was estimated at 363,897*l.*, of which 152,970*l.* represented the French trade, and 210,927*l.* the foreign. In 1897 the corresponding figures were 343,731*l.*, 186,402*l.*, and 157,329*l.* During the 10 years the total trade had, therefore, fallen off by 20,166*l.*, that of France and French colonies had increased by 33,432*l.*, and that of other countries decreased by 53,598*l.*

Principal imports, 1896.

The detailed French statistics for 1896 show the principal imports to have been:—Wines and spirits, about 68,000*l.*; cereals and flour, 66,000*l.*; textiles, 41,000*l.*; colonial products (mainly sugar and tobacco), 23,500*l.*; hardware and metal goods, 21,700*l.* Of the imports of the year only about 3,500*l.* worth came directly from the United Kingdom. Australia, on the contrary, is credited with imports to the value of about 148,000*l.*, thus absorbing almost the whole of the trade with foreign countries.

Value of exports, 1888 and 1897.

The export trade of the island had increased very largely between the years 1888 and 1897. In the former year the total value was 53,158*l.*, divided into France and French colonies, 45,945*l.*, and other countries, 7,213*l.* In 1897 the exports to France and French colonies amounted to 131,991*l.*, and those to other countries, 147,019*l.*, giving a total of 279,010*l.* The total increase amounted, therefore, to 225,852*l.*, and that of the trade with France and French colonies to 86,046*l.*, whilst that of the trade with foreign countries attained 139,806*l.*, springing thus from an insignificant to an important figure. No details are available for either of the above years, but in view of the statistics for 1896 it may safely be assumed that this remarkable rate of increase is mainly due to the growth of the mineral output, especially in so far as the exports to foreign countries are concerned.

Principal exports, 1896.

During 1896 the principal exports were:—Minerals, nearly 140,000*l.*; animal products (principally preserved meats and hides), about 43,000*l.*; and coffee, 22,400*l.* The exports to Great Britain were represented by the solitary item—minerals, 45,600*l.* Australia is the most important foreign customer of New Caledonia and imported, in 1896, over 77,000*l.* worth of mineral and other products.

Customs tariff.

As regards customs duties the island is, in general, subject to the French tariff. The duties on many goods, and especially on certain classes of mining machinery, are consequently so heavy as to be a serious impediment to enterprises of all kinds. Were free trade or a more liberal tariff adopted the prosperity of the island would probably be enormously increased. The few exemptions from duty include breadstuffs, some chemical products, coal, pig-iron, boilers and agricultural implements and machinery. No export dues are levied.

Tahiti, &c.

Area and population.

Two islands belonging to the Society Archipelago, Tahiti and Moorea, are the most important of the French possessions in Polynesia, which however, further include, geographically and administratively, the remainder of that group, the Marquesas Archipelago, those of Tuamotu, Gambier, Tubuai, the two small islands of Motuiti and Batutu and the Island of Rapa.

Number of officials, &c.

The whole area of these various possessions only amounts to 4,210 square kiloms. with a total population of not quite 24,000. French dominion in this part of Polynesia began in 1843 with the acquisition of the Marquesas. Tahiti, on the contrary, though ranking as a protectorate since 1843, only became a colony as lately as 1880.

The entire body of possessions is administered by a governor resident at Papeete, the capital of Tahiti, assisted by 14 subordinate administrative officials who form part of the 235 constituting the total number of functionaries of all descriptions connected with these colonies. It may, perhaps, be remarked that the colonists and inhabitants have recently raised a certain amount of outcry against the number of officials employed in some branches. The military force, on the other hand is trifling, comprising 161 men all told.

Colonial Budget.

Local Budget.

The Colonial Budget estimates for 1899 show an expenditure on behalf of the colony of 33,904*l.*, including a direct subsidy to the Local Budget of 3,168*l.* The Local Budget for 1898 showed an estimated expenditure of 48,698*l.* By adding the Colonial Budget estimates for 1899 and those of the Local Budget for 1898, after due deduction of the subsidy, it will be found that the net annual expeuditure is probably between 75,000*l.* and 80,000*l.*, which amounts to a per capita expenditure of about 3*l.* 10*s.*, considerably more than half of which is borne by the Local Budget. The

Financial situation, 1898.

financial situation during 1898, according to the speech made by the Governor at the opening of the Conseil-Général in November last, had not justified the expectations which had been formed owing to the small production and fall in price of various exports.

Local politics.

The political horizon in these far-away possessions is by no means clear at present. A very strong feeling in favour of administrative and financial autonomy, including a complete re-organisation of the system of government, exists. The autonomist party maintains that what it designates as "the present state of tutelage" is a direct hindrance to economic progress. It declares that the colony is quite able to support all necessary expenditure, except that of military occupation, conditionally on its financial affairs being managed without the intervention of the Home Government.

Means of communication.

Two other questions are exciting a large amount of local interest. The first is that of means of communication with the outside world which are, apparently, at present dependent upon foreign vessels. A proposal formulated by a Paris house for the running of a regular line of steamers from Noumea to Tahiti,

touching at Apia and some of the French islands on the way, has been considered. The undertaking was to enjoy a subsidy of 200,000 fr. per annum, exemption from certain dues and a number of other advantages. The proposal has, however, been rejected by the Conseil Général which has declared itself in favour of giving up the annual subsidy from the Home Government on condition that the latter shall organise a regular service on whatever lines it may think fit. At the same time the Conseil is prepared to arrange, at the cost of the colony, for the inauguration of regular communication between the different islands.

Chinese immigration.

The second question is the alarming proportions assumed by the immigration of Chinese of the trading class. Almost the whole of the retail trade is stated to have fallen into their hands, whilst they are already beginning to attack the wholesale markets. With a view to stemming the tide, somewhat heavy special taxes have been imposed on immigrants of this nationality, with the exception of farmers, market gardeners, and domestic servants.

Economic situation.

Notwithstanding all the advantages, climatic and other, which are possessed by the island and by Tahiti in particular, the economic situation can only be characterised as in general distinctly bad. Numerous efforts are being made to arrest the seemingly threatening decay. The question of attracting *bona-fide* French colonists is occupying local attention. To this end it is proposed to acquire, with public funds, a large domain, and to divide it into a number of small holdings to be eventually distributed amongst colonists of the above class bringing with them the necessary capital of a few thousand francs. The project, however, does not as yet appear to have reached a very definite stage.

Trade with France.

From a strictly French point of view the situation is exceptionally unsatisfactory, in that the mother country occupies the second place as regards imports, their value being rather less than a quarter of the total, and only the sixth as regards exports. This circumstance is mainly attributable to the geographical position of the colony, the lack of a suitable market in France for local products, to the want of proper means of communication, and finally to the fact that the foreign business houses are as a rule richer and far better organised for carrying on the various classes of trade peculiar to the colony. Notwithstanding these facts the commercial relations of France with her colony have shown a gradual improvement during the last few years.

Principal imports.

The principal imports are: textiles, flour, various preserved meats, fish, &c., spirits and wines, hardware, machinery, and coal. About half of the import trade is in the hands of the United States, New Zealand and the United Kingdom ranking third and fourth respectively.

An exhaustive report, from the pen of M. Raoul, President of the Papeete Chamber of Commerce, bearing upon the trade of the island, was published early in the current year by the "Quinzaine Coloniale." As far as imports are concerned the following special reasons are given therein as the main causes of the small amount

of trade done with France:—(1) The higher price of French products. (2) The excessive freights charged. (3) The fact that the natives, from long habit, have become accustomed to foreign goods.

Import from France and other countries compared.

This is borne out by the fact that, notwithstanding the high protective duties, textiles are mainly imported from the United Kingdom and the United States, and agricultural implements, tools, hardware, woodwork, vehicles, furniture, &c., come principally from the latter country, whilst the imports from the mother country consist, for the most part, of spirits and wines, cement, iron, bricks, crockery, glassware, stationery, the finer classes of preserves and certain fancy goods, none of which, except the first can be said to rank as first class imports.

Value of imports, 1888 and 1898.

As regards the value of imports the figures in 1888 were:— France and French colonies, 26,202*l.*; other countries, 107,906*l.*; total, 134,108*l.* The figures for 1898 have lately been published in the "Quinzaine Coloniale," and may consequently be taken in place of those for 1897, which have, in most cases, been the latest returns available. The total value of imports was for 1898, 118,698*l.*, and that of the trade with France and French colonies 28,115*l.*, leaving for other countries 90,583*l.* Thus the total trade had, during the 11 years, decreased by 15,410*l.*, and that with foreign countries by 17,323*l.*, whilst imports of French origin had increased in value by nearly 2,000*l.* In this respect, however, there had been considerable fluctuations during the period under consideration; in 1896 the French and colonial imports reached the low figure of about 12,000*l.*

Imports from Great Britain declining.

The imports from the United Kingdom, which seem to consist almost exclusively of textiles, are declining rapidly, as far as can be judged from the only special statistics published, those for 1896 and for 1898. In the former year they were at 18,553*l.*, and in the latter at 7,498*l.*

Principal exports.

The exports of the French Polynesian possessions consist chiefly of mother-of-pearl, pearls, copra, and vanilla. A certain number of other products, such as cocoanut flour, tortoiseshell, cotton fine straw, and articles manufactured therewith, &c., are exported in small quantities. Some of these commodities held formerly a far more important place than at the present day, whilst other products exported some years ago have practically disappeared from the list.

Mother-of-pearl.

Mother-of-pearl had up to last year been by far the most important export and usually represented about half the total value. During 1898, however, its value only amounted to a little over 8,000*l.* as compared with between 45,000*l.* and 50,000*l.* in 1896. This enormous decrease is, according to the "Bulletin des Halles," due to the fact that the beds have not been properly preserved, and the supply has consequently, for the present, been nearly worked out. It is also said that the quantity varies considerably, according to the fisheries which are open. It is exported almost exclusively to the United States, the United Kingdom, and New Zealand.

Pearls.

About 4,000*l.* worth of pearls are annually exported.

Copra. The exportation of copra has also fallen-off from about 32,000*l.* in 1896, to some 21,000*l.* in 1898, owing probably to a disease which has attacked the cocoanut palms in certain islands. Hitherto the average exportation has been 5,400 tons per annum. Of this, 1,700 tons usually went to Hamburg, 1,500 tons to Liverpool, and 1,400 tons to San Francisco.

Vanilla. The value of the vanilla exported had sunk slightly in 1898 in comparison with 1896, *i.e.*, 15,000*l.*, as against 16,000*l.* Owing to an exceptional rise in price in 1897 this product then ranked far higher than in 1898. The price has again fallen seriously, but it is estimated that the production will increase from 20 to 30 per cent. during the next two years as the result of the formation of new plantations.

Value of exports, 1888 and 1898. In 1888 the value of exports to France and French colonies was nil, whilst foreign countries received merchandise worth 104,009*l.* from the colony. In 1898, out of a total value of 117,240*l.*, France received products worth 4,047*l.*, and other countries, 113,193*l.*

Value of exports to the United Kingdom. Of this latter amount, the United States received about 40,000*l.*, New Zealand, 27,000*l.*; the Azores, 14,700*l.*; the United Kingdom, 12,000*l.*; Russia, 5,300*l.*; Germany, 3,700*l.*, &c. It will be observed that the exports have, during the 11 years, increased in value by nearly 13 per cent. This cannot, nevertheless, be taken as indicating an improvement as, since 1891, when they stood at over 180,000*l.*, they have shown, on the whole, a steady downward tendency.

Customs tariff. The colony possesses a special customs tariff imposing, as has already been indicated, somewhat heavy duties on imports of foreign origin. Practically all goods pay higher or lower rates, but the following appear to be the most interesting charges:—Textiles, cutlery, and galvanised iron, 13 per cent.; hardware, 10 per cent.; tools and agricultural implements, 8 per cent., all *ad valorem*; pig-iron, steel, copper, &c., 12 fr. per 100 kilos.; and spirits from 1 fr. 50 c. to 2 fr. 25 c. per litre, according to strength.

An export duty of 250 fr. per ton on mother-of-pearl exported to foreign countries was voted by the Conseil-Général at the end of last year.

Freights. With regard to freights, the Messageries Maritimes Company have lately made arrangements for a through rate to Tahiti from Marseilles, viâ Sydney and Auckland, of 120 fr. per cubic metre, which constitutes an important reduction on the freights formerly charged.

Table I.—Value of Imports into the French Colonies during the Years 1888 and 1893–97.

Colonies.	1888.		1893.		1894.		1895.		1896.		1897.	
	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.
	£	£	£	£	£	£	£	£	£	£	£	£
Martinique	341,518	566,063	455,265	560,802	544,832	608,323	349,729	488,248	421,110	484,946	434,180	416,862
Guadaloupe	464,804	495,327	387,586	403,726	471,076	925,397	319,153	330,488	453,817	406 263	358,569	317,917
Réunion...	381,804	509,918	346,861	432,179	479,014	543 587	408,200	513,923	521,199	345,648	596,619	261,269
French Guyana	328,960	157,032	223,343	101,155	375,615	105,268	308,841	125,979	238,903	103,961	253,559	119,797
Senegal	498,068	524,215	357,319	191,840	660,739	408,233	720,214	389,312	563,541	473,121	667,428	488,212
French Guinea...	52,206	93,950	22,970	138,517	23,762	170,047	28,213	172,683	20,788	162,735	48,520	253,977
Ivory Coast			7,392	90,647	17,133	90,647	14,531	104,263	32,551	151,147	27,908	157,985
Dahomey			178,421	235,711	140,389	286,216	134,969	282,543	147,180	238,136	116,075	210,377
Congo			57,029	68,370	46,745	135,628	69,094	154,623	59,482	130,482	...	...
Mayotte...	9,372	11,655	8,712	13,520	14,433	10,981	13,344	8,561	20,793	5,841	...	...
Madagascar*	12,949	71,867	95,515	125,570	132,772	141,705	83,727	163,579	218,406	335,570	396,318	330,767
Indian Settlements	22,526	145,727	21,034	108,730	25,465	100,261	13,915	86,143	15,259	104,058	...	...
St. Pierre and Miquelon ...	141,529	288,324	102,410	140,307	120,948	146,358	155,200	168,593	181,467	161,747	177,895	191,580
New Caledonia...	152,970	210,927	209,698	158,824	208,927	134,013	150,507	141,156	195,691	159,461	186,402	157,329
Tahiti, &c.	26,202	107,906	23,457	85,769	14,634	87,728	17,791	78,854	12,560	100,268	15,485	132,797
Cochin-China and Cambodia	447,589	1,773,668	392,280	1,076,585	398,685	1,054,599	689,772	1,620,461	720,174	1,339,996	824,788	1,231,554
Annan			8,581	146,716	5,068	168,843	12,896	125,864	9 909	142,988	8,947	177,954
Tonkin			349,755	722,637	394,049	667,193	413,172	657,378	479,720	518,458	583,479	665,667
Total	2,880,497	4,956,579	3,247,528	4,801,605	4,074,086	5,785,107	3,909,268	5,642,591	4,312,850	5,364,826	4,696,172	5,114,044
Grand total	7,837,076		8,049,133		9,859,193		9,551,859		9,677,676		9,810,216	

* Previous to 1895 the figures cannot be regarded as conclusive.

Table II.—VALUE of Exports from the French Colonies during the Years 1888 and 1893–97.

Colonies.	1888.		1893.		1894.		1895.		1896.		1897.	
	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.
	£	£	£	£	£	£	£	£	£	£	£	£
Martinique	885,350	43,556	900,648	52,078	839,226	52,306	731,199	46,850	808,869	43,210	719,592	45,421
Guadaloupe	1,013,977	17,345	914,448	7,551	828,270	5,766	473,292	7,426	731,877	4,373	439,712	6,139
Réunion	463,963	152,808	624,221	47,710	572,470	49,297	702,360	12,280	662,746	25,799	714,900	17,080
French Guyana	229,718	8,452	199,055	6,354	559,200	10,652	343,669	12,209	348,510	7,665	277,446	8,981
Senegal	465,638	189,571	549,827	162,439	576,502	142,981	364,340	128,130	532,202	242,572	637,840	199,254
French Guinea	6,895	107,651	24,752	165,413	25,742	181,076	26,712	180,430	34,238	194,956	26,770	239,577
Ivory Coast			54,893	117,868	44,668	116,496	43,232	103,557	88,594	85,654	88,848	98,028
Dahomey			93,223	256,616	108,269	286,728	156,291	260,416	154,310	211,016	60,502	168,363
Congo			17,993	74,877	57,583	179,749	25,794	170,196	24,901	163,049	...	...
Mayotte	37,021	4,265	60,071	1,833	38,038	3,889	39,393	1,236	46,564	1,193	...	...
Madagascar*	6,487	87,130	62,027	69,353	48,117	99,921	16,148	101,666	41,852	100,957	49,211†	122,765†
Indian Settlements	432,656	414,840	503,326	293,875	489,813	334,239	319,484	309,413	127,303	243,775	...	...
St. Pierre and Miquelon	466,478	234,871	292,648	121,803	280,814	91,481	254,687	88,405	326,159	90,473	316,657	109,205
New Caledonia	45,945	7,213	180,944	186,405	56,412	197,989	91,790	216,306	95,611	131,777	131,591	147,019
Tahiti, &c.	...	104,009	25,932	116,852	17,177	107,207	9,251	96,228	1,594	127,905	12,318	112,460
Cochin-China and Cambodia	80,331	2,732,606	433,194	2,767,141	444,879	3,026,409	469,556	2,906,462	333,094	2,775,906	567,275	3,182,890
Annam			9,878	92,202	5,983	94,986	5,592	76,276	3,833	91,160	12,534	88,570
Tonkin			12,397	394,460	14,051	513,082	29,771	326,002	64,612	248,404	59,585	732,111
Total	4,134,459	4,104,317	4,959,477	4,934,830	5,007,214	5,494,251	4,102,561	5,043,488	4,426,870	4,789,844	4,115,181	5,277,863
Grand total	8,238,776		9,894,307		10,501,468		9,146,049		9,216,714		9,393,044	

* Previous to 1895 the figures cannot be regarded as conclusive.

† Figures taken from the Report on the 1899 Budget.

Table III.—VALUE of Imports of French Colonies during the Year 1896, Divided according to Classes of Merchandise.

Articles.	Martinique.		Guadaloupe.	
	French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.
	£	£	£	£
Live animals	98	17,617	38	20,149
Animal products, hides, &c. ..	9,517	47,886	7,893	100,636
Fish	48,194	1,542	40,809	1,847
Animal substances for medicines and perfumery..	33	..	..	..
Cereals and flour..	29,205	100,020	23,395	132,780
Vegetables, fruits, and seeds ..	1.112	437	920	261
Colonial products	40.975	60,067	17,255	5,765
Oils and vegetable essences ..	12,375	23,642	20,894	13,074
Drugs	237	9	..	..
Timber	2,952	26,453	1,180	27,826
Vegetable fibres, &c.	199	229	9	50
Spirits, wines, &c.	60,352	4,393	62,540	2,422
Building stone, mineral combustibles, &c.	10,435	79,358	1,964	31,013
Metals	12,230	458	8,697	1,843
Chemical products	6,696	68,749	33,870	25,689
Colouring matters	2,198	24	2,020	25
Yarns and threads	5,808	49	5,966	531
Textiles	64,154	20,216	39,353	21,033
Paper, printed matter, &c. ..	5,779	169	3,547	86
Dressed skins and furs	16,052	247	16,201	308
Machinery, hardware, tools, metal goods, &c.	30,342	2,999	98,049	2,246
Arms and ammunition	4,680	399	282	4
Furniture and woodwork ..	4,476	22,741	1,331	5,011
Musical instruments	686	50	671	99
Matting, wickerwork, &c. .	1,880	1,562	1,560	463
Pottery and glassware	7,450	244	6,976	304
Dyes	1,094	..	..	..
Clothing	..	..	15,835	336
Sundry products and manufactured goods	42,301	5,386	42,562	12,462
Total..	421,510	484,946	453,817	406,263
Grand total	906,456		860,080	

NOTE.—In certain cases the specie imported is included, in the French statistics, under the head: "Machinery, hardware, tools, &c." The amounts are as follows:—

	£
Guadaloupe	74,849
French Guinea	1,215
Ivory Coast	19,598
Dahomey	24,076
Congo	3,951
Indian Settlements	594
St. Pierre and Miquelon	3,218
Tahiti	2,997
Total	130,498

VALUE of Imports of French Colonies during the Year

Articles.	Réunion.		French Guiana.	
	French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.
	£	£	£	£
Live animals	29,370	3,312	233	23,872
Animal products, hides, &c. ..	21,547	65,990	27,220	22,641
Fish	32,354	3,401	4,149	4,113
Animal substances for medicines and perfumery..	..	..	..	..
Cereals and flour..	30,112	219,621	33,220	18,219
Vegetables, fruits, and seeds ..	568	638	534	213
Colonial products	1,772	5,358	15,017	10,055
Oils and vegetable essences ..	6,705	2,159	8,094	1,592
Drugs	..	..	55	12
Timber	5,567	3,844	19	5,744
Vegetable fibres, &c.	53	67	169	5
Spirits, wines, &c..	91,151	3,106	58,735	2,006
Building stone, mineral combustibles, &c.	17,045	9,387	2,814	3,891
Metals	4,351	2,236	3,687	1,341
Chemical products	22,061	2,063	1,248	205
Colouring matters	2,923	16	865	2
Yarns and threads	7,733	257	500	72
Textiles	102,371	11,694	30,080	3,429
Paper, printed matter, &c. ..	8,151	895	1,600	237
Dressed skins and furs	9,945	377	7,664	102
Machinery, hardware, tools, metal goods, &c.	48,175	4,533	6,724	958
Arms and ammunition	310	3	1,279	92
Furniture and woodwork ..	3,207	245	1,598	1,754
Musical instruments	..	..	233	22
Matting, wickerwork, &c. ..	..	..	787	23
Pottery and glassware	5,657	406	2,610	71
Dyes	..	..	13	..
Clothing	..	..	..	..
Sundry products and manufactured goods	70,071	6,010	29,756	3,290
Total	521,199	345,648	238,903	103,961
Grand total	866,847		342,864	

1896, Divided according to Classes of Merchandise—continued.

Senegal.		French Guinea.		Ivory Coast.		Dahomey.	
French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.
£	£	£	£	£	£	£	£
250	705	..	86	805	2	8	130
18,892	1,780	1,149	1,163	1,380	3,035	1,390	1,737
891	188	152	183	304	334	84	209
12	..	..	..	..	..	..	..
90,289	6,927	1,723	7,100	947	4,090	2,592	5,994
2,278	54,755	34	1,065	84	45	55	1,553
40,293	54,935	1,003	10,802	700	8,746	5,317	26,031
28,709	5,350	573	617	156	136	633	260
298	..	..	..	4	3	..	2
5,154	14,332	794	1,826	372	1,082	1,565	2,305
35	70	..	100	5	5	..	260
52,549	13,058	2,942	8,497	4,509	23,224	113,775	56,776
13,673	25,282	1,640	3,200	783	1,767	1,935	2,861
2,640	2,500	88	1,115	328	2,063	474	5,083
1,531	409	220	5,807	1,957	1,960	1,237	6,225
4,548	384	197	138	141	310	90	339
10,580	6,298	37	144	73	2,172	222	4,848
183,371	250,900	944	81,153	1,805	36,712	7,073	64,758
4,601	301	252	108	505	229	351	256
5,887	1,269	169	102	175	360	165	379
28,479	4,810	3,252	8,156	9,686	20,859	3,241	26,210
8,756	4,849	1,640	3,421	498	24,684	1,025	1,411
5,486	1,950	205	1,740	4,291	4,939	2,395	5,225
233	52	36	45	73	169	29	175
109	111	142	109	64	217	45	330
6,531	3,714	404	2,668	768	2,814	551	7,042
3	20	66	70	..	..	8	708
..	..	..	..	..	..	683	1,456
47,463	18,172	3,126	23,320	2,138	11,170	2,237	15,573
563,541	473,121	20,788	162,735	32,551	151,147	147,180	238,127
1,036,662		183,523		183,698		385,307	

VALUE of Imports of French Colonies during the Year 1896,

Articles.	Congo.		Mayotte.	
	French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.
	£	£	£	£
Live animals	391	96		
Animal products, hides, &c. ..	3,325	4,699		
Fish	340	3,254		
Animal substances for medicines and perfumery..	..	3		
Cereals and flour..	2,142	4,540		
Vegetables, fruits, and seeds ..	108	80		
Colonial products	1,333	5,858		
Oils and vegetable essences ..	438	506		
Drugs	..	..		
Timber	646	1,045		
Vegetable fibres, &c.	10	8		
Spirits, wines, &c.	18,202	10,187		
Building stone, mineral combustibles, &c.	1,683	1,999		
Metals	135	3,640		
Chemical products	1,456	3,756		
Colouring matters	749	376		
Yarns and threads	3,633	56,016		
Textiles				
Paper, printed matter, &c. ..	277	368		
Dressed skins and furs	628	439		
Machinery, hardware, tools, metal goods, &c.	10,253	11,970		
Arms and ammunition	4,100	6,308		
Furniture and woodwork ..	1,992	1,349		
Musical instruments	13	514		
Matting, wickerwork, &c. ..	667	408		
Pottery and glassware	1,045	7,290		
Dyes	..	51		
Clothing	..	..		
Sundry products and manufactured goods	5,916	5,722		
Total	59,482	130,482	..	..
Grand total	189,964		..	

Total imports 20,793*l.* and 5,851*l.* respectively

Details not obtainable

Divided according to Classes of Merchandise—continued.

Madagascar.	Indian Settlements.		St. Pierre and Miquelon.		New Caledonia.	
Total Imports.	French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.
£	£	£	£	£	£	£
11,642	..	256	30	8,711	70	15,729
11,958	826	391	6,723	15,131	3,748	11,735
1,658	..	118	26,105	2,007	1,735	1,178
243	..	..	5	..	39	..
29,372	29	4,614	3,861	17,044	13,349	52,728
880	..	4,768	315	915	1,059	2,278
15,490	135	24,217	8,615	14,731	12,701	10,869
3,470	145	6,807	3,022	724	4,563	1,497
215	524	492	25	..	55	24
5,739	190	6,857	131	9,081	20	8,562
556	33	608	427	70	126	181
67,006	4,846	3,568	37,256	6,664	65,935	1,908
1,763	34	19,418	792	12,440	1,319	12,082
37,160	..	2,274	1,730	2,131	3,857	3,170
4,164	22	1,496	25,911	17,356	1,489	1,588
2,317	..	..	1,260	1,220	1,311	217
1,737	..	758	10,416	7,701	1,929	1,523
282,888	2,523	18,830	18,916	5,890	31,716	9,473
5,390	2,235	825	987	154	5,224	1,315
5,567	..	..	3,885	2,353	5,914	2,035
25,804	..	738	15,397	8,951	13,432	8,347
1,114	..	..	577	633	536	446
1,114	..	76	1,298	6,814	1,459	595
805	..	..	137	41	407	238
874	..	..	292	44	1,319	221
7,500	4	388	3,193	1,774	3,436	419
20	6	147	..	126	48	158
..	..	..	..	..	3,552	869
27,530	3,707	6,412	10,161	19,041	15,393	10,076
553,976	15,259	104,058	181,467	161,747	195,691	159,461
..	119,317		343,214		355,152	

VALUE of Imports of French Colonies during the Year 1896,

Articles.	Tahiti, &c.	
	French and French Colonial Goods.	Foreign Goods.
	£	£
Live animals	2	1,864
Animal products, hides, &c. ..	340	6,950
Fish	290	2,323
Animal substances for medicines and perfumery..	..	..
Cereals and flour..	6	17,206
Vegetables, fruits, and seeds ..	45	1,627
Colonial products	807	3,484
Oils and vegetable essences ..	412	631
Drugs	..	..
Timber	33	2,221
Vegetable fibres, &c.	..	..
Spirits, wines, &c.	2,360	2,767
Building stone, mineral combustibles, &c.	177	2,515
Metals	60	1,864
Chemical products	16	192
Colouring matters	65	650
Yarns and threads	47	2,052
Textiles	2,350	26,634
Paper, printed matter, &c. ..	274	790
Dressed skins and furs	403	1,010
Machinery, hardware, tools, metal goods, &c. . ..	1,026	7,607
Arms and ammunition	71	274
Furniture and woodwork ..	63	3,703
Musical instruments	103	298
Matting, wickerwork, &c. ..	11	104
Pottery and glassware	271	214
Dyes	..	51
Clothing	465	1,388
Sundry products and manufactured goods	2,863	11,849
Total..	12,560	100,268
Grand total	112,828	

Divided according to Classes of Merchandise—continued.

Cochin-China and Cambodia.		Annam.		Tonkin.	
French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.	French and French Colonial Goods.	Foreign Goods.
£	£	£	£	£	£
9	4,697	.	300	434	8,710
7,683	19,430	201	508	12,697	13,174
518	7,279	30	188	1,101	1,717
128	..	..	..	240	..
9,893	50,223	163	1,967	21,110	21,920
1,273	48,380	40	718	1,674	3,701
125,868	55,673	192	12,399	17,826	31,767
7,464	137,642	77	631	6,735	26,279
14	8,693	..	13,945	102	41,625
438	11,658	..	21	442	2,531
561	11,049	82	41	669	4,752
67,834	11,051	2,393	675	127,812	7,786
24,500	160,714	744	7,205	10,204	44,450
33,686	115,973	2,507	2,235	33,222	12,411
8,657	4,492	116	437	7,371	2,265
6,442	3,248	43	191	4,233	1,374
4,112	43,053	6	46,900	2,093	145,118
259,242	363,787	310	11,172	87,806	35,841
8,452	63,826	468	23,819	13,407	22,355
3,813	4,255	150	158	7,581	2,887
90,133	47,166	1,007	4,184	43,035	23,810
5,051	14,185	118	1,671	31,741	4,535
1,398	13,166	51	690	2,055	4,591
408	1,081	85	228	650	230
536	7,217	6	518	553	4,403
15,222	27,656	141	6,290	10,376	20,197
99	15,896	..	926	22	3,354
..	..	..	..	..	..
36,740	97,206	1,029	4,971	34,529	26,675
720,174	1,339,996	9,909	142,988	479,720	518,458
2,060,170		152,897		998,178	

Table IV.—VALUE of Exports of French Colonies

Classes of Merchandise.	Martinique.		Guadaloupe.	
	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.
	£	£	£	£
Live animals		..	..	..
Animal products, raw hides, &c.	1,621	..	286	..
Fish	..	..	..	..
Ivory, tortoise-shell, mother-of-pearl, &c.	160	..	289	..
Cereals and flour	312	..	..	..
Vegetables, fruits, and seeds ..	225	..	7,942	140
Colonial products	471,445	143	653,156	699
Oils and vegetable essences ..	..	..	..	..
Timber	6,432	..	18,900	..
Vegetable fibres	..	..	..	..
Drugs	1,598	..	..	..
Spirituous liquors	215,722	288	31,091	167
Building stone, mineral combustibles, &c.	..	..	..	..
Metals	..	..	..	..
Chemical products	..	..	..	..
Yarns and threads	..	..	..	..
Textiles	..	..	..	..
Furniture and woodwork ..	..	..	..	..
Matting, wickerwork, &c. ..	..	..	..	..
Pottery and glassware	153	..	..	..
Dyes	862	..	2,345	..
Sundry exports	144	87	52	81
Total..	698,674	518	714,061	1,087
Total exportation of colonial goods	699,192		715,148	
Imports re-exported ..	152,887		21,102	
Grand total	852,079		736,250	

NOTE.—In certain cases specie is included amongst the imports

during the Year 1896, Divided according to Classes of Products.

Réunion.		French Guiana.		Senegal.		French Guinea.	
France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.
£	£	£	£	£	£	£	£
131	..	..	..	927	..	1,405	16,249
601	..	..	846	2,958	4,659	1,459	7,877
..	..	208	..	..	..	..	..
..	..	..	..	353	..	192	571
1,170	5,174	..	..	..	..	131	300
190	..	141	..	256,794	107,923	4,486	17,180
589,577	16,460	331	..	..	..	128	..
18,812	..	2,330	..	135,610	7,142	22,220	142,320
..	..	254	..	..	..	..	..
1,383	..	..	..	..	..	..	177
..	..	..	..	..	..	..	..
34,680	228	..	..	..	..	..	..
..	..	1,256	6,580	..	..	..	..
..	..	337,762	..	5,976	..	..	364
..	..	..	..	..	..	..	..
957	..	..	..	..	..	..	..
	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..
507	155	165	152	1,017	256	48	8,863
648,008	22,017	342,447	7,578	403,635	119,980	30,064	193,901
670,025		350,025		523,615		223,965	
18,520		6,150		251,159		5,227	
688,545		356,175		774,774		229,192	

re-exported. The amounts are as follows:—

	£
Martinique	24,800
French Guiana	6,011
Tahiti	1,042
French Guinea	1,188
Total	33,041

VALUE of Exports of French Colonies during the Year

Classes of Merchandise.	Ivory Coast.		Dahomey.	
	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.
	£	£	£	£
Live animals	..	..	..	1,501
Animal products, raw hides, &c.	..	677	..	..
Fish	..	..	..	15,120
Ivory, tortoise-shell, mother-of-pearl, &c.	..	1,026	..	..
Cereals and flour	..	159	..	..
Vegetables, fruits, and seeds	2,662	5,791	82,138	146,855
Colonial products	3,725	..	..	..
Oils and vegetable essences	62,691	34,205	72,131	41,470
Timber	3,598	22,245	..	..
Vegetable fibres	..	518	..	..
Drugs	..	..	..	..
Spirituous liquors	..	..	..	..
Building stone, mineral combustibles, &c.	..	..	..	..
Metals	15,836	20,533	..	..
Chemical products	..	..	..	..
Yarns and threads	..	..	..	..
Textiles	..	..	..	102
Furniture and woodwork	..	..	..	..
Matting, wickerwork, &c.	..	..	..	..
Pottery and glassware	..	..	..	..
Dyes	..	..	..	..
Sundry exports	82	64	1,052	5
Total	88,594	85,218	155,321	205,053
Total exportation of colonial goods	173,812		360,374	
Imports re-exported	436		4,952	
Grand total	174,248		365,326	

1896, Divided according to Class of Products—continued.

Congo.		Mayotte.	Madagascar.	Indian Settlements.		St. Pierre and Miquelon.	
France and Colonies.	Foreign Countries.	Total Exports.	Total Exports.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.
£	£	£	£	£	£	£	£
..	168		16,419	..	2,353	..	..
..	..		24,566	..	802	145	257
..	..		..	..	2,749	303,662	66,469
5,992	64,206		356	..	..	..	..
..	..		7,375	..	133,704	..	..
..	8,190		..	..	1,786	..	..
..	491		2,490	..	..	..	..
7,802	74,771		52,732	..	..	..	..
9,035	9,014		3,127	..	1,028	..	..
..	..		29,005	..	..	..	..
..	800		..	..	..	..	..
..	..		..	..	..	..	..
..	..		599	..	..	..	..
..	..		4,443	..	..	..	..
..	..		..	..	..	..	.
..	..		..	720	..	..	..
..	..		381	80,763	43,009	..	..
..	..		..	..	..	2,327	945
..	..		923	..	..	..	..
..	..		..	..	8,984	..	..
..	..		..	..	..	..	..
278	229		393	1,475	14,918	58	238
23,107	157,869	..	142,809	82,958	209,333	306,192	67,909
180,976		..	..	292,291		374,101	
6,977		..	..	78,787		42,531	
						..	
187,953		..	142,809	371,078		416,632	

Total exports 46,564*l.* and 1,193*l.* respectively, details not obtainable.

VALUE of Exports of French Colonies during the Year 1896

Classes of Merchandise.	New Caledonia.		Tahiti, &c.	
	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.
	£	£	£	£
Live animals	..	..	..	..
Animal products, raw hides, &c.	38,357	5,071	..	212
Fish	..	700	..	..
Ivory, tortoise-shell, mother-of pearl, &c.	..	730	..	52,424
Cereals and flour..	..	1,013	..	930
Vegetables, fruits and seeds ..	..	9,243	..	36,647
Colonial products	22,356	..	1,584	14,832
Oils and vegetable essences ..	203	144	..	..
Timber	..	..	..	218
Vegetable fibres	..	..	..	8,450
Drugs	..	..	..	..
Spirituous liquors				
Building stone, mineral combustibles, &c.	..	106	..	..
Metals	34,009	105,482	..	..
Chemical products	..	..	..	..
Yarns and threads	..	..	..	..
Textiles	..	..	..	..
Furniture and woodwork ..	..	..	..	..
Matting, wickerwork, &c. ..	..	..	..	..
Pottery and glassware	..	..	..	..
Dyes	..	..	..	..
Sundry exports	173	1,879	10	360
Total..	95,098	124,368	1,594	114,073
Total exportation of colonial goods	219,466		115,667	
Imports re-exported ..	7,922		13,832	
Grand total	227,388		129,499	

Divided according to Classes of Products—continued.

Cochin-China and Cambodia.		Annam.		Tonkin.	
France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.	France and Colonies.	Foreign Countries.
£	£	£	£	£	£
130	15,394	..	8,308	..	1,276
6,845	92,940	1,054	3,020	14,820	27,702
2,474	316,105	..	2,271	283	7,966
4,328	5,469	163	1,077	781	283
232,355	2,152,343	..	3,709	..	91,151
10,759	11,066	..	1,950	..	110
68,989	3,381	2,616	53,662	..	1,805
963	3,942	..	2,008	29,380	14,161
308	1,740	..	849	2,178	886
..	53,690	..	2,176	..	4,026
..	370	..	983	..	1,195
..	..	..	..	..	204
..	..	..	420	756	60,598
..	1,776	..	..	..	1,341
..	2,296	..	3,390	..	165
..	481	..	..	..	..
258	382	..	287	109	788
783	615	..	..	177	494
..	5,241	..	1,724	430	18,193
..	..	..	..	..	..
..	..	..	2,690	..	10,005
685	39,022	..	2,636	5,061	2,978
328,877	2,706,253	3,833	91,160	53,975	245,328
3,035,130		94,993		299,303	
73,870		..		13,713	
3,109,000		94,993		313,016	

APPENDIX.

Report on the Colonial Budget for 1900

The report for the Chamber of Deputies on the Colonial Budget for 1900 has appeared whilst the present report was in the printer's hands. It has, therefore, been impossible to make any extensive use of the information it contains, but a few supplementary remarks, embodying the substance of its introduction, may, perhaps, not be without interest.

The most prominent questions treated are the cost to the Home Government, the Defence, and the Trade of French Colonies as a whole.

Expenditure.

The annexed table, which has been extracted from the report under consideration, is specially interesting as furnishing the latest data with regard to total expenditure of every description by the French Government from 1885 to 1898. It may, however, be remarked that, in many cases, the amounts given do not coincide with those quoted at the beginning of this report which were extracted from the French Report on the Colonial Budget for 1897.

With regard to present expenditure, the reporter states that the committee has succeeded in reducing the estimates for 1900 in such a manner as to effect an economy of over 3,000,000 fr. (120,000*l.*), as compared with the amount voted for 1899. Whilst pointing out the gradual decrease in civil expenses, he states that, satisfactory as the above reduction would seem to be, the committee cannot guarantee that the eventual result will be such as to justify the hopes of economy which might be based upon its revised estimate. In support of this view he mentions that, from various causes, the true figure of the cost of French colonies to the mother-country during 1899 is likely to reach 117,732,428 fr. (4,710,000*l.*) instead of 90,794,762 fr. (3,632,000*l.*) or somewhat over 1,000,000*l.* more than the sum originally voted.

Defence.

To explain this considerable excess of expenditure, the reporter states that a very large proportion of it was due to certain measures taken for the defence of the colonies against the possibility of direct attack, but at the same time remarks that it has not yet been definitely decided whether such expenditure should come under the colonial estimates or under those of the Ministry of Marine. With reference to the actual question of defence he observes that the period of colonial expansion once at an end it seemed natural to expect a considerable decrease in the number of troops in the colonies, but that it must be borne in mind that the acquisition of a colonial empire has brought the country face to face with new problems, engendered a new and vaster phase both of general and military policy, especially as regards other colonising Powers, and necessitated special measures in view of the increase not only of the possible causes of conflict between France and those Powers, but also of the number of points which, under given circumstances, might be open to attack.

Thus, not only is the higher expenditure during the year 1399 accounted for but, possibly, a somewhat similar rate for 1900

foreshadowed. It may, however, be noted that the question of actual means of defence, as far as bodies of colonial troops (with the exception of Indo-China) is concerned, seems to be still under consideration.

The reporter observes that, as a rule, both the local revenue and the trade of the various colonies have increased steadily, but that the situation in West Africa and Indo-China shows the most marked improvement. As regards trade he cites two cases in point:—Senegal, whose total trade movement has progressed in value from 50,000,000 fr. (2,000,000*l.*) in 1897 to 62,000,000 fr. (2,480,000*l.*) in 1898, and Cochin-China and Cambodia, whose combined trade has increased by about 25,000,000*l.*, or, roughly 16 per cent. during the same period. **Trade.**

Some interesting figures bearing upon French colonial trade in general and its results are quoted. It would appear that, during the 12 years from 1886 to 1897 inclusive, its total value reached, in round numbers, 5,379,000,000 fr. (215,000,000*l.*) about equally divided between imports and exports. The whole share of French trade, import and export, in the above sum amounted to 2,242;000,000 fr. (89,700,000*l.*), as against 3,000,000,000 fr. (120,000,000*l.*) for the trade of foreign countries, the remainder representing the value of inter-colonial commerce. The reporter remarks that on estimating the profits of French merchants and manufacturers at 20 per cent. on the value of the mother-country's exchanges with her colonies, it will be found that their gains have amounted to 450,000,000 fr. (18,000,000*l.*), which is still far from the 1,000,000,000 fr. (40,000,000*l.*) expended during the same period. Nevertheless, other advantages have undoubtedly accrued from the possession of a Colonial Empire, which, though so easy of calculation would make up for a great deal of this excess of expenditure.

TOTAL Expenditure for MILITARY AND

Colonies.	1885.	1886.
	Francs.	Francs.
Martinique	2,375,865	2,187,202
Guadaloupe	2,169,597	2,118,254
Réunion	2,345,748	2,986,252
French Guiana	3,267,462	3,265,527
Sénégal	5,457,288	7,343,882
Sudan	3,439,431	3,375,194
French Guinea	..	..
Gaboon-Congo	125,050	..
Saint-Pierre and Miquelon	360,432	123,980
Ivory Coast	..	351,134
Mayotte	237,922	
Comores		218,354
Tahiti and dependencies	804,728	828,464
New Caledonia	7,950,787	8,059,027
French possessions in India	542,436	540,249
Obock.—French Somaliland	..	804,943
Dahomey	..	..
Cochin-China	3,238,595	3,230,643
Annam-Tonkin	615,000	615,000
Diégo-Suarez	..	..
Sainte-Marie	35,000	35,000
Nossi-Bé	302,174	285,086
Madagascar	..	..
Common expenditure	1,447,290	1,426,134
Total	34,714,805	37,794,325
Obock—		
Vote of August 12, 1885	624,720	..
Madagascar—		
Vote of August 5, 1885	12,190,000	..
,, July 29, 1887	..	..
,, July 26, 1888	..	..
,, December 7, 1894	..	..
,, December 8, 1895	..	..
Annam-Tonkin—		
Vote of December 12, 1884 (43,422,000)	200,000,000	..
,, April 1 and April 8, 1885	..	..
,, March 29, 1892.—Supplementary vote	..	..
Dahomey—		
Vote of April 16, 1892	..	..
,, March 30, 1893	..	..
,, July 28, 1893	..	..
Siam Expedition—		
Vote of January 8, 1897	..	..
Grand total	247,529,525	37,794,325

Colonial Purposes, 1885–98.

CIVIL EXPENSES.

1887.	1888.	1889.	1890.	1891.
Francs.	Francs.	Francs.	Francs.	Francs.
2,057,303	1,835,071	1,954,296	1,881,784	2,722,595
2,128,472	1,937,535	1,895,350	1,856,869	1,579,055
3,202,699	2,985,404	3,981,186	4,359,015	4,186,476
3,298,357	4,921,142	5,696,225	5,913,109	6,339,588
7,192,002	6,383,401	6,111,731	5,573,525	5,633,070
3,515,077	3,405,714	3,038,356	3,228,172	3,870,510
..	..	..	..	33,000
2,047,015	1,569,048	2,007,664	1,777,187	1,493,937
343,667	304,647	329,211	338,206	316,757
..	..	..	..	..
187,630	160,718	160,478	140,738	99,222
95,000	86,950	17,700	12,200	16,600
802,901	716,695	791,061	824,353	544,006
7,770,814	7,907,375	7,652,840	7,528,471	8,189,685
548,300	483,247	477,699	427,309	304,638
441,831	575,561	466,956	449,192	562,142
..	..	..	..	..
3,242,999	3,133,515	2,701,337	2,570,070	3,416,957
615,000	20,415,000	15,615,000	12,450,000	10,450,000
..	773,257	984,398	1,292,242	2,085,505
35,000	35,000	35,000	35,000	35,000
252,643	163,188	144,325	121,482	67,716
..	..	..	..	..
3,347,339	1,876,403	1,753,660	1,450,842	1,644,094
41,124,049	59,668,871	55,814,473	52,238,716	53,540,553
..	..	..	..	..
..	..	..	..	..
931,668	..	..	..	..
..	608,000	..	..	..
..	..	..	..	..
..	..	.	..	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
42,055,717	60,276,871	55,814,473	52,238,716	53,540,553

TOTAL Expenditure for Colonial MILITARY AND CIVIL

Colonies.	1892.	1893.	1894.
	Francs.	Francs.	Francs.
Martinique	2,330,865	2,464,389	2,517,848
Guadaloupe	1,533,331	1,586,907	1,587,322
Réunion	4,447,179	4,538,672	4,356,727
French Guiana	5,995,499	5,846,187	5,854,473
Sénégal	6,073,913	6,116,371	6,137,513
Sudan	5,189,622	5,719,622	6,219,622
French Guinea	38,500	33,675	33,675
Gaboon-Congo	1,507,267	1,494,417	1,887,270
Saint-Pierre and Miquelon	261,183	274,334	291,800
Ivory Coast	..	..	..
Mayotte	98,209	97,099	97,195
Comores	15,128	..	..
Tahiti and dependencies	830,429	821,599	868,552
New Caledonia	8,223,997	8,141,688	8,154,632
French possessions in India	313,835	330,596	331,764
Obock.—French Somaliland	572,642	604,472	660,300
Dahomey	900,000	900,000	900,000
Cochin-China	3,158,332	3,199,439	3,166,326
Annam-Tonkin	24,450,000	24,450,000	24,450,000
Diégo-Suarez	2,066,288	2,252,695	2,245,728
Sainte-Marie	35,000	35,000	35,000
Nossi-Bé	74,000	72,000	72,106
Madagascar	..	..	..
Common expenditure	3,044,898	3,607,463	3,980,502
Total	71,160,117	72,586,635	73,848,355
Obock—			
Vote of August 12, 1885	..	..	..
Madagascar—			
Vote of August 5, 1885	..	..	..
,, July 29, 1887	..	..	..
,, July 26, 1888	..	..	..
,, December 7, 1894	..	..	65,000,000
,, December 8, 1895	..	..	..
Annan-Tonkin—			
Vote of December 12, 1884 (43,422,000)	..	..	..
Vote of April 1 and April 8, 1885 ..	..	..	..
Vote of March 29, 1892.—Supplementary vote	12,000,000	..	..
Dahomey—			
Vote of April 16, 1892	3,000,000	..	..
,, March 30, 1893	..	6,230,000	..
,, July 28, 1893	..	7,000,000	..
Siam Expedition—			
Vote of January 8, 1897	..	..	..
Grand total	86,160,117	85,816,635	138,848,355

Purposes, 1885–98—continued.

EXPENSES—continued.

1895.	1896.	1897.	1898.	Total per Colony.
Francs.	Francs.	Francs.	Francs.	Francs.
2,762,766	2,496,569	2,538,161	2,657,448	32,782,162
1,683,310	1,649,493	1,522,729	1,653,709	24,901,933
4,402,813	4,411,937	4,215,251	4,472,591	54,891,950
6,070,234	6,039,104	5,815,623	6,329,810	74,652,340
6,238,033	6,209,326	5,950,674	6,047,618	86,468,347
9,000,000	8,450,000	7,080,000	6,948,000	72,499,320
33,675	30,000	300,000	302,809	805,334
1,890,061	2,657,721	2,554,060	2,515,253	23,649,880
286,211	282,599	271,953	289,442	4,301,576
..	210,310	..	..	210,310
95,195	79,845	44,845	44,845	1,771,295
..	..	..	..	243,578
903,969	882,874	822,019	871,416	11,313,066
8,322,758	7,909,971	8,885,365	7,408,853	111,006,263
338,906	339,943	320,574	308,073	5,607,569
827,950	605,471	614,807	614,807	7,301,070
900,000	..	..	..	3,600,000
3,272,062	3,304,368	3,082,686	3,064,741	43,782,074
25,550,000	25,850,000	25,090,000	23,700,000	234,315,000
2,220,423	185,973	..	..	14,056,509
35,000	20,000	..	..	495,000
71,175	61,033	24,233	..	1,711,171
..	2,004,536	11,850,000	20,080,000	34,934,536
4,435,480	4,039,648	3,991,860	4,324,119	40,369,732
79,340,021	77,720,721	83,874,840	91,633,534	885,580,015
..	..	..	..	
..	..	485,000(*a*) 1,400,000(*b*)	..	
..	..	..	..	
..	..	..	..	
..	..	..	..	
17,932,000	..	..	..	
..	..	16,660,000*	2,440,000†	351,301,388
..	..	..	..	
..	..	..	..	
..	..	..	..	
..	..	..	..	
..	..	..	..	
..	..	4,800,000	..	
97,272,021	77,720,721	107,219,840	94,073,534	1,236,881,403

* Vote of March 5, 1898. † Vote of July 22, 1898, Madagascar.

TOTAL Expenditure for Colonial Purposes, 1885–98—continued.

MILITARY AND CIVIL EXPENSES—continued.

Colonies.	Total Amounts Contributed by Colonies to Home Expenditure, 1885-98.	Excess of Expenditure.	Excess of Receipts from Colonies.
	Francs.	Francs.	Francs.
Martinique	411,000	32,371,162	..
Guadaloupe	453,960	24,447,973	..
Réunion	279,000	54,612,950	..
French Guiana	2,100,000	72,552,340	..
Sénégal	153,120	86,315,227	..
Sudan	..	72,499,320	..
French Guinea	6,000	799,334	..
Gaboon-Congo	22,000	23,627,880	..
Saint-Pierre and Miquelon.. ..	52,400	4,249,176	..
Ivory Coast	5,000	205,310	..
Mayotte	7,300	1,763,995	..
Comores	..	243,578	..
Tahiti and dependencies	131,440	11,181,626	..
New Caledonia	2,008,800	108,997,463	..
French possessions in India ..	11,510,040	..	5,902,471
Obock.—French Somaliland ..	1,200	7,299,874	..
Dahomey	6,000	3,594,000	..
Cochin-China	57,850,000	..	14,067,930
Annam-Tonkin	570,000	233,745,000	..
Diégo-Suarez..	3,000	14.053,509	..
Sainte-Marie	..	405,000	..
Nossi-Bé	4,500	1,706,671	..
Madagascar	..	34,934,536	..
Common expenditure	..	40,369,732	..
Total	75,574,760	829,975,656	19,970,401
Obock—			
Vote of August 12, 1885.. ..			
Madagascar—			
Vote of August 5, 1885			
„ July 29, 1887			
„ July 26, 1888			
„ December 7, 1894 ..			
„ December 8, 1895 ..			
Annan-Tonkin—			
Vote of December 12, 1884 (43,422,000)	..	351,301,388	..
Vote of April 1 and April 8, 1885			
Vote of March 29, 1892.—Supmentary vote			
Dahomey—			
Vote of April 16, 1892			
„ March 30, 1893			
„ July 28, 1893			
Siam Expedition—			
Vote of January 8, 1897.. ..			
Grand total	75,574,760	1,181,277,044	19,970,401
Total excess of expenditure ..	..	1,161,306,643	
Equivalent in sterling £	..	45,992,342	

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No. 518 Miscellaneous Series.

DIPLOMATIC AND CONSULAR REPORTS.

GERMANY.

MEMORANDUM ON, AND TRANSLATION OF,

THE NEW GERMAN SICKNESS AND OLD AGE INSURANCE LAW.

Presented to both Houses of Parliament by Command of Her Majesty,
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Memorandum on, and Translation of, the New German "Sickness and Old Age Insurance Law" by Mr. Gastrell, Commercial Attaché to H.M.'s Embassy at Berlin.

(Received at Foreign Office, December 22, 1899.)

On January 1, 1900, the new "Sickness and Old Age Insurance Law" will come into operation in the German Empire. The former Law of 1889,* on the subject of workmen's insurance against old age and infirmity, will then be repealed. The new Law, in its present shape, was passed in the spring of this year, and was signed by the German Emperor on July 13. It is, of course, an Imperial Law applying to all parts of the Empire; and one great object of the new measure is to bring about a more equal distribution in the different districts of Germany, of the incidence of the cost of maintaining the pension system for old age and infirmity, as established by Imperial Law.

The Conditions and Extent of the Insurance.

In the new law obligatory insurance is extended to foremen ("Werkmeister"), technical officials ("Techniker"), and all those whose employment forms their chief vocation; also to teachers and tutors, and to ships' captains. They are all, when their earnings do not exceed 100*l.* (2,000 marks) a year, bound to insure.

As regards foreign workmen, the new Law provides that the Bundesrath may, in cases where they are temporarily employed in Germany, determine to what extent they are not subject to obligatory insurance. But the employers of such persons have, nevertheless, in these cases to pay to the Insurance Institution the same sums that they would have had to pay if they had not been exempted from obligatory contributions.

Officials, employed by the Empire, by the Federated States, and by the Municipalities, as also teachers and tutors in public schools and institutions, are not liable to obligatory insurance during the period of their preparation for their future vocations, nor in cases where they will eventually become entitled to a pension from other sources which is equivalent to that of the first "Wages Class," namely, 3*l.* (60 marks) plus the Imperial subsidy

* And Supplementary Law of June 8, 1891.

of 50 marks (2*l.* 10*s.*) and 3 pf. for every contributory week (see page 7). The officials of the Insurance Institution are subject to the same rule. Finally, those persons are not liable to obligatory insurance whose powers of work have been permanently diminished in consequence of old age, illness, or any other infirmity, to the point that they cannot any longer earn a third of their average wages. This state is assumed to exist when they are no longer in a position to earn by work—reasonably corresponding to their powers and capabilities derived from their training and previous calling—a third of the money which similar persons living in the same neighbourhood and enjoying good bodily and mental condition are accustomed to earn by work after similar training. The new Law supplies this fresh definition of "infirmity," which differs from that of the present Law.

Exemption from obligatory insurance is also to be granted to such persons as have completed their seventieth year. In the same way are to be treated persons who undertake work for wages in the course of a calendar year at certain seasons only and for not more than 12 weeks or in the whole year for not more than 50 days but who otherwise earn their living as employers ("Betriebsunternehmer") or support themselves by other means, so long as contributions for the same have not already been paid during 100 weeks. These two exemptions are granted, if the interested parties request such release.

The right of voluntary insurance is granted to :—

1. Superintendents of works ("Betriebsbeamte"), men with a technical education ("Techniker"), foremen ("Werkmeister"), commercial assistants, &c., teachers and tutors, and ship's captains, in so far as their earnings exceed 100*l.* (2,000 marks) but do not amount to 150*l.* (3,000 marks) a year.

2. Business men and other employers who do not regularly employ more than two workmen liable to insurance, as also persons working in their own homes, in so far as the latter have not been declared liable to insurance by the Bundesrath.

3. Persons who only obtain free board and lodging in return for their labour, or who have been declared by the Bundesrath to be exempt because of their occupation being merely temporary.

The right to voluntary insurance, as hitherto, is still dependent upon the applicant not having attained the age of 40 years complete.

The right to a pension for infirmity is cancelled when the incapacity is brought about intentionally. But, on the other hand, if the incapacity is caused by a crime or intentional misdemeanour, then the pension can be entirely or partially withdrawn, or it may, under certain circumstances, be paid wholly or partially to the family of the insured person.

Paragraph 18 of the new Law confers on the Insurance Institution the right to take over the care of sick persons generally, without regard to what particular sick fund institution they may belong to. The Insurance Institution can cause the recovery to

be effected either by placing the sick person in a hospital or in a convalescent home. But if he is a member of a "family household" or has his own household, then his consent to this step is required. During the sick person's recovery, those persons who were usually supported by him out of his earnings are to receive certain support within strict limits. If the insured person refuses to undergo the necessary measures for his recovery, without legal or other good reasons, then the infirmity pension can for a time be withdrawn from him either wholly or partially in every case where he has been warned of the consequences of his action and has been notified that his incapacity is being caused by his own behaviour.

The Insurance Institution can, at the request of a person entitled to a pension, allow him to be taken into a hospital instead of receiving the said pension.

The period during which contributions have to be paid before the insured person becomes entitled to a pension amounts:—

I. In the case of an infirmity pension to 200 contributory weeks (it was formerly 235 contributory weeks), when at least 100 weekly contributions have actually been paid in. Where a smaller number of actual payments have been made by the insured person, then 500 contributory weeks must expire in order to claim the pension.

II. In the case of an old age pension, to 1,200 contributory weeks (it was formerly 1,410 weeks).

In the case of voluntary insurance, the paid contributions will only be reckoned for the infirmity pension when at least 100 actual payments have been made either on the ground of liability to insurance or on account of the right to voluntary insurance existing in the case of the person making the payments.

With regard to the reckoning in of weeks of sickness, there is a fresh provision made that the period of convalescence following on an illness is to be treated the same as the period of illness itself; and that the convalescent period after child-birth is to be counted in the same way up to six weeks after an ordinary confinement.

The amounts of the contributions to be paid weekly will be fixed in advance for specified periods of time. They will, in the new Law, be fixed up to December 31, 1910; and from that date onwards they will be fixed by the Bundesrath for periods of 10 years. The contributions are to be so apportioned that they will cover the capital value of the pensions chargeable to the Insurance Institution, the reimbursements of the contributions, and the other expenses of the Insurance Institution.

The amount of the contributions per week will, by the new Law, amount to:—

Wages-Class.	Amount.
	Pfennige.
I	14
II	20
III	24
IV	30
V	36

In the present Law there are only the first 4 wages-classes, *i.e.*, I to IV; and for these the weekly contributions remain the same in the new Law. No. V wages-class is new, and a weekly rate of 36 pf. is fixed for it. Any alteration in these rates of contribution requires the sanction of the Reichstag.

The limits of the five wages-classes are determined by the amount of the yearly earnings from work. The first three remain, under the new Law, the same as under the present Law; they are:—

Wages-Class.	Currency.		Remarks.
	From—	To—	
	Marks.	Marks.	
I	..	350*	About 17*l.* 10*s.*
II	350	550	Up to 27*l.* 10*s.*
III	550	850	„ 42*l.* 10*s.*
IV	850	1,150	„ 57*l.* 10*s.*
V	1,150†	..	Over 57*l.* 10*s.*

* Inclusive. † Upwards.

The average amount of yearly earnings and not the actual amount determines the wages class. Teachers and tutors belong to the wages-class IV if no larger sum than 1,150 marks (57*l.* 10*s.*) is returned by them as yearly earnings.

Every insured person can insure in a higher wages-class, but, in such cases, the employer is only bound to pay that sum which would properly fall to him if the said insured person were kept in his proper wages-class.

The infirmity pensions, as hitherto, consist of 3 parts:—

1. Of a fixed minimum sum.
2. Of the sum granted by the Imperial Government (State subsidy).
3. Of the fixed weekly sum added for each contributory week during which the insurance has been effected.

Under the present Law the fixed minimum (1) has been 60 marks (3*l.*) for all the former 4 wages-classes. In the new Law a different minimum sum is granted to each of the 5 wages-classes (No. V being new), namely:—

Wages-Class.	Amount.	
	Currency.	Sterling.
	Marks.	£ s.
I	60	3 0
II	70	3 10
III	80	4 0
IV	90	4 10
V	100	5 0

The sum granted by the Empire (2) remains as before 50 marks (2*l.* 10*s.*).

The fixed weekly sums added for each contributory week (3) are now fixed at:—

Wages-Class.	Amount.	Remarks.
	Pfennige.	
I	3	Formerly 2 pf.
II	6	„ 6 pf.
III	8	„ 9 pf.
IV	10	„ 13 pf.
V	12	Did not exist

The old age pensions consist, as before, of 2 parts:—

1. Of the sum granted by the Imperial Government (State subsidy).

2. Of a further sum, which under the present law is made up of a total obtained by multiplying the minimum number of contributory weeks (1,410) by a certain number of Pfennige (according to the wages class); but which, under the new Law, will consist of fixed amounts of pensions for each wages-class.

The amount of the sum granted by the Empire (1) remains the same as formerly, *i.e.*, at 50 marks (2*l.* 10*s.*).

The further added sum (2) used to be made up as follows: —

Wages-Class.		Amount.
		Pfennige.
I	1,410 weeks multiplied by ..	4
II	„ „ ..	6
III	„ „ ..	8
IV	„ „ ..	10

In the new Law this arrangement is abolished, and fixed old-age pensions are granted for each of the five wages-classes. The minimum number of contributory weeks is also reduced from 1,410 to 1,200. The fixed pensions are now:—

Wages-Class.	Amount.	
	Currency.	Sterling.
	Marks.	£ s.
I	60	3 0
II	90	4 10
III	120	6 0
IV	150	7 10
V	180	9 0

When contributions for different wages-classes have to be taken into account, the pension for old age which corresponds to the average of these contributions will be granted.

In future the pensions may be paid *in advance* in monthly instalments (as hitherto).

If an insured person dies after a request for a pension was lodged with the competent authorities, the husband or wife, as the case may be, is in the first place entitled to carry on the procedure and, in case the pension is granted, to draw the amount of the pension up to the day of death as long as the widow or widower has been living in domestic intercourse with the person entitled to the pension until the day of his death. If such a person does not exist, the legal succession devolves according to the provisions of the Civil Code.

Insured female persons who marry are entitled to claim the reimbursement of half of their contributions, if the same have been made for at least 200 weeks before the marriage takes place. The period was formerly 235 weeks. This right must be claimed before the expiration of one year from the date of the marriage. This period was formerly only 3 months.

In the same way the right of a widow and of her children under 15 years of age, left by an insured person, to the reimbursement of half the contributions is made dependent upon a minimum number of 200 contributory weeks. This period was formerly 235 weeks. Under the present Law failure to immediately present such a claim bars the right to this compensation; but, under the new Law, any claim made within one year from the date of the death of the insured person will hold good.

As formerly, weeks of sickness, periods of military service and of enjoyment of infirmity or old age pensions, will be reckoned as contributory weeks; but, in the new Law, the following period will also count, *i.e.*, the time during which a person, with a reversionary claim, has drawn an accident pension in consequence of a diminution of at least 20 per cent. in his ability to earn a livelihood.

In connection with the question of the withdrawal of an infirmity pension, there is a new provision by which the cure of the person to regain his capacity to earn a living can be carried on at the same time as the pension is drawn, and this can be paid to the family of the insured person for its support. In case of un-

reasonable refusal of the person to undergo the cure, the pension can be for a time either wholly or partially withdrawn.

With regard to the maximum amount of the pensions, the former regulations are more or less the same, with the exception of one important alteration. And this is that, in future, the maximum point is only reached when the infirmity pension, together with an accident pension, and with other pensions, amounts to 7½ times the initial or fixed sum granted to each class of the infirmity pensions (see page 7). In the present Law, the maximum is fixed for all pension holders alike at 415 marks (20*l.* 15*s.*).

The transfer of claims to a third party, as also their being taken as pledges, can only legally take place under the following circumstances:—

1. To cover an advance which has been made to the person entitled to a pension by his employer, by a Board of the Insurance Institution, or by a member of such a Board at his own request and before assignment of the pension.

2. To cover the necessary expenses for the sustenance of a wife and her legitimate children.

3. To cover claims of the local Associations for the relief of the poor.

The above statement comprises all the chief alterations from the present Insurance Law to the new Law which comes into force in 1900, as regards all matters affecting the insured persons; and it is founded on data kindly supplied to me by Dr. Zacher of the Imperial Insurance Office, Berlin.

A complete translation of the new Law accompanies this Memorandum, and in it will be found all information with regard to the management of the insurance funds, to the means taken for the readjustment of the incidence of the cost of maintaining this pension system, and to all matters concerning administration.

A copy, in English, is also enclosed of the official statement of the working of the existing Law, which it will be, perhaps, well for those persons who have no acquaintance with the present German system of workmen's insurance, to peruse before reading this Memorandum on the changes that are to be made on January 1, 1900.*

Translation of the Infirmity Insurance Law of July 13, 1899.

1. *Extent and Object of the Insurance.*

Sec. 1. *Obligatory Insurance.*—This law stipulates that after the completion of the 16th year of their age the following persons are to be insured:—

(1) Persons employed as labourers journeymen, assistants

* Sent to the Board of Trade.

("Gehülfen"), apprentices or domestic servants earning wages or salary.

(2) Managing officials ("Betriebsbeamten"), foremen and technical workers ("Techniker"), clerks and apprentices in houses of business (exclusive of assistants and apprentices employed in apothecaries' shops) other employés whose service or employment forms their principal vocation, such as teachers and tutors and all persons in so far as they draw wages or salary, if their regular annual earnings from work do not exceed 2,000 marks (100*l.*).

(3) Those persons employed for wages or salary as crews of German sea-going vessels and of vessels for internal navigation (Sec. 2 of Law of July 13, 1887); ships' captains, however, only when their regular annual earnings from work in wages or salary do not exceed 2,000 marks (100*l.*). The carrying of a German flag, authorised by virtue of Article 2, Sec. 7, par. 1, of the Law of March 15, 1888, does not constitute the ship a German vessel within the meaning of this Act.

Sec. 2.—By resolution of the Federal Council the enactments of Sec. 1 can also be extended to special callings in the whole Empire or with restrictions to certain districts; also

(1) To masters in small trades and business men who do not regularly employ at least one workman;

(2) To persons in independent trades, irrespective of the number of workmen employed by them, who work in their own workshops but who are employed by and for the account of other persons in trade in the production and elaboration of industrial products (persons engaged in home industries); and to the latter also when they furnish the raw and other requisite materials, and for the time during which they work temporarily for their own account.

By resolution of the Federal Council it can be decided:—

(1) To what extent persons in trade under whose orders and for whose account persons engaged in home industries (par. 1, fig. 2) work are to be called upon to fulfil the obligations laid down in this law for employers in respect of such persons as are engaged in home industries, and as regards their assistants other journeymen and apprentices.

(2) To what extent persons in trade under whose orders middlemen (distributors of work and material, agents, "middle-masters," &c.) have industrial products produced or elaborated, are to be called upon to fulfil the obligations laid by this Law on employers in respect of persons thus employed by the middlemen engaged in home industries, and as regards their assistants, journeymen and apprentices.

Sec. 3.—Commissions on profits and payments received in kind count as wages or salary. For these the average value is taken into account and is fixed by the lower administrative authorities.

An employment for which only free maintenance is given as remuneration does not count within the meaning of this law as an employment entailing obligatory insurance.

Sec. 4.—It will be decided by resolution of the Federal Council to what extent temporary services are not to be considered as an employment entailing obligatory insurance within the meaning of this Law.

The Federal Council is authorised to prescribe that foreigners, whose sojourn in the country is permitted by the authorities for a limited time, at the expiration of which they must return abroad, are not liable to obligatory insurance. In so far as such a regulation may have been issued, employers who employ such foreigners have, in accordance with the detailed regulations of the Imperial Insurance Office, to pay to the Insurance Institution the same amount that they would have to pay out of their own pockets for the insurance of such foreigners (Sec. 27, par. 3) if the insurance obligation existed for them.

Sec. 5.—Officials in the employment of the Empire, of the Confederated States, and of the "Communal Unions" ("Communal Verbände"),* also teachers and tutors in public schools or institutions are not liable to obligatory insurance so long as they are employed solely in training for their future calling or in so far as a claim to pension is guaranteed them at least the amount of the infirmity pension to which they would be entitled under the scale of the first wages-class.

Officials of the Insurance Institution who enjoy moneys from special benefit funds are not liable to obligatory insurance, so long as a claim to pension of the sum specified in par. 1 is guaranteed them.

Further, persons not subject to the obligatory insurance are those who give instruction for remuneration, when this occurs during their scientific preparation for their future vocation; soldiers who are employed in the service as workmen; and those to whom an infirmity pension has been awarded under decisions based on the laws of the Empire.

Finally, those persons are not liable to obligatory insurance whose powers of work have been permanently diminished in consequence of old age, illness, or other infirmity to the point that they cannot any longer earn a third of their average wages. This state is assumed to exist when they are no longer in a position to earn by work, corresponding to their powers and capabilities, and which can reasonably be expected of them from their training and previous calling, a third of the money which similar persons in good bodily and mental conditions are accustomed to earn by work after similar training and in the same neighbourhood.

Sec. 6.—If they personally request it, those persons are to be exempted from obligatory insurance who enjoy from the Empire, from a Confederated State, from a Communal Union, from an Insurance Institution or a special benefit fund, pensions, half-pay, or similar receipts at least to the amount of the infirmity

* These are unions of parishes for their own administrative purposes.—Note by Translator.

pension under the scale of the first wages-class. In a similar manner are treated teachers or tutors in public schools or institutions, as also those persons who, under decisions of the Laws of the Empire on accident insurance, are entitled to the receipt of an annual pension of at least the same amount. The same applies to persons who have completed their seventieth year. The lower administrative authorities of the place of employment decide as to accepting or rejecting the request for exemption. Complaint against the award is permissible to the next superior authority whose decision is final. With the withdrawal of the request for exemption the obligation to insure again becomes operative.

In the same way those persons are, at their own request, to be relieved of obligatory insurance who undertake work for wages in the course of a calendar year only in certain seasons and for not more than 12 weeks, or in the whole year for not more than 50 days, and also such persons as independently gain their livelihood by other means, and others who work without wages or salary, so long as contributions have not been already paid for the same for 100 weeks. The Federal Council has authority to issue further regulations on this point.

Sec. 7.—If they are asked to do so, the Federal Council can decide how far the regulations of Sec. 5, pars. 1–3, and of Sec. 6, par. 1, shall be applied to officials in the employment of other public associations or corporations; to teachers and tutors in private sc or institutions, in so far as these persons have not been guaranteed a right to a pension amounting to at least the amount of the infirmity pension under the first wages-class scale; and to persons to whom (on the ground of previous employment by such associations or corporations, schools or institutions) pensions, half-pay or similar payments equal in amount to the above-mentioned minimum infirmity pension have been awarded.

Sec. 8. *Special Benefit Funds.*—Persons liable to insurance, who are employed in undertakings carried on by the Empire, by a Confederated State, or by a Communal Union, satisfy the legal obligation to insure by participating in a special benefit fund (already previously existing or to be founded) for the particular employment in cases where provision is made for them equal to that provided by the laws of the Empire, and in so far as the particular benefit fund complies with the following conditions:—

(1) The contributions of the insured may, in so far as they are paid for infirmity insurance in accordance with the laws of the Empire, not exceed the half of the contributions to be levied for the latter according to Sec. 32. This regulation is not applicable when in the particular benefit fund the contributions are levied in accordance with a course of procedure differing from the mode of reckoning of Secs. 32 and 33, and as a result of which higher contributions are demanded in order to cover the services emanating from the benefit fund. When, in this respect, higher contributions are to be collected, the contributions of the insured may not exceed those of the employer.

(2) The insured person must participate in the administration of the benefit fund by representatives elected in secret election and proportionally according as their contributions compare with those of the employers.

(3) In calculating the time during which contributions must be paid to claim the pension and the amount of the pension itself, the time during which contributions to insurance institutions continued (Sec. 65), without prejudice to the regulation of Sec. 32, is to be taken into account for persons participating in such benefit funds in so far as concerns the amount of the claim under the law.

(4) A course of procedure by Court of Arbitration, with the co-operation of the representatives of the insured, must be admitted as regards the claim of individual insured persons to obtain an infirmity and old age person.

(5) If for the granting of services under the Laws of the Empire, special contributions have been collected from the insured or an increase of the contributions of the same has taken place or takes place, the pensions, in accordance with the Laws of the Empire, may be added to the other services of the benefit funds only in so far as the portion of the latter to be paid out amounts, for the separate member classes, on the average to at least the Imperial allowance.

The Federal Council decides, at the request of the competent Imperial, State, or Communal authority, what benefit funds (pension, old age, infirmity funds) fulfil the above-mentioned requirements. The Imperial grant (Sec. 35) will be awarded to the infirmity and old age pensions to be paid out by such benefit funds as are recognised by the Federal Council in so far as a claim to such pensions would exist in accordance with the Imperial legal regulations.

Sec. 9.—From January 1, 1891, participation in such benefit funds as are approved by the Federal Council will be considered as equivalent to insurance in an insurance institution.

If under such a benefit fund the contributions are not collected in the form prescribed by Secs. 130 et seq. the directorate of the benefit fund has to attest, in the case of persons withdrawing from the latter, the duration of their participation, and for this period the amount of wages drawn, the connection with a sick fund, and the length of any illnesses (Sec. 30). The Federal Council is authorised to issue regulations as to the form and contents of the attestation.

Sec. 10.—The Federal Council can decide, if applied to, that the regulations of Secs. 8 and 9 be applied to members of other benefit funds whose object is to provide for cases of infirmity and old age.

Sec. 11.—By decision of the Federal Council it may be permitted to the Association of Mariners (see Berufsgenossenschaft*), established on the basis of the Law of July 13, 1887, to found

* A Berufsgenossenschaft is an association of all persons connected with a special calling or branch of trade for mutual insurance.—Note by Translator.

under its guarantee a special organisation for the purpose of undertaking the infirmity insurance in accordance with this law for such persons as are employed in works or factories belonging to the Association or in special kinds of such works, also for those members who at the same time are liable to accident insurance and infirmity insurance. Such an organisation can, however, only be permitted when at the same time provision is made by the Association for the widows and orphans therein insured. If such organisations are established those persons for whom they are intended are by virtue of the law insured in them.

If the insured are called upon to pay contributions they are to participate in the same way as the employers in the administration.

The portion of the contributions which devolves on the employers can, on the average, not be lower than the half of the contributions which are to be paid on the basis of this Law (Sec. 32). The contributions of the insured may not be higher than those of the employers.

If the contributions of the insured are graduated, the pensions for the survivors are also to be graduated in the same proportion.

The time of waiting, prior to obtaining a pension, may neither in the case of the infirmity insurance, nor in that of the widows' and orphans' provisions, be extended longer than is provided in Sec. 29.

The insured must—if they accept temporary employment in foreign ships, while their families remain in Germany, or if they, for other reasons, leave their employment, which obliges them to insure—be permitted to re-insure, according to the regulations of this Law, not only with regard to infirmity insurance, but also with regard to widows' and orphans' provisions.

Sec. 12.—The regulations of Secs. 8 and 9 apply correspondingly to the organisations specified in Sec. 11; they are subject to the control of the Imperial Insurance Office, in accordance with Secs. 108 to 110 of this Law.

The Courts of Arbitration, established for cases of infirmity insurance, are also competent to deal with the infirmity insurance undertaken by the Association of Mariners, and also with the provisions for widows and orphans organised by it.

Sec. 13.—Resolutions of the Association, establishing the organisations specified in Sec. 11, the codes of rules, and alterations made in them, require the sanction of the Federal Council.

The Federal Council decides after hearing the "Beisitzer" of the insured in the Courts of Arbitration (as specified in Sec. 91 of the Law of July 13, 1887).

The Federal Council decides the time when the organisation comes into force.

Sec. 14. *Voluntary Insurance.*—The following persons are entitled to insure voluntarily, so long as they have not completed their 40th year (self-insurance):—

(1) Superintendents of works, foremen, men with technical education, business assistants, and others whose employment in

that capacity forms their chief vocation, as well as teachers, tutors, and ships' captains, all of them in so far as their regular annual earnings from work amount in wages or salary to more than 2,000 marks (100*l.*), but not to more than 3,000 marks (150*l.*).

(2) Traders and manufacturers who do not regularly employ more than two workmen liable to insurance, as well as persons engaged in home industries, all of them, in so far as the obligation to insure has not by resolution of the Federal Council (Sec. 2, par. 1) been extended to them.

(3) Persons who, on the basis of Sec. 3, par. 2, and Sec. 4, par. 1, are not liable to obligatory insurance. These persons are further entitled, when withdrawing from the circumstances under which their right to self-insurance is based, to continue the self-insurance, and to renew the same in accordance with the regulations of Sec. 46.

Persons who withdraw from a position in which the obligatory insurance is necessary, are entitled to voluntarily continue or to renew the insurance.

Re-Insurance.—Persons such as are described above, and who are employed in works in connection with which a special benefit fund (Secs. 8, 10, 11) has been established, are entitled to insure themselves in the benefit fund. Persons liable to insurance and employed in such works are further permitted, when withdrawing from the work or position of service on which the insurance obligation is based, to re-insure in the special benefit fund, so long as they do not by new work or employment become liable to insurance under another special benefit fund or in an Insurance Institution. So long as the conditions for voluntary insurance are present, voluntary insurance in an Insurance Institution can be effected.

Sec. 15.—The object of the insurance is to afford a claim to the granting of a pension in case of incapacity to earn a livelihood, or of incapacity resulting from old age.

Every insured person, irrespective of age, and who, in the meaning of Sec. 5, par. 4, is permanently incapable of earning a livelihood, receives an infirmity pension. Incapacity to earn a livelihood, occasioned by an accident, constitutes a claim, without prejudice to the provisions of Sec. 113, to an infirmity pension only in so far as the infirmity pension to be awarded exceeds the amount of the accident pension.

Every insured person, irrespective of the existence of incapacity to earn a livelihood, and who has completed his or her 70th year, receives an old-age pension.

Sec. 16.—Every insured person not permanently incapable of earning a livelihood, but who has been incapable of earning a livelihood during 26 weeks uninterruptedly, receives an infirmity pension for the further time during which he is incapable of earning a livelihood.

Sec. 17.—The insured person has no claim to an infirmity pension if he has intentionally brought about his incapacity to

earn a livelihood. The granting of the pension can be entirely or partially refused if the insured person has caused his incapacity to earn a livelihood by committing what a court has adjudged to be a crime or a deliberate offence. In cases of the latter kind, and in so far as the insured person has a family living in the country, for whose maintenance he has hitherto provided by his earnings from work, the pension can be assigned wholly or partially to his family.

Sec. 18.—If an insured person is so ill that incapacity to earn a livelihood is to be apprehended as a consequence of the illness, which would constitute a claim to a pension, in accordance with the laws of the Empire, the Insurance Institution is entitled to cause him to undergo a cure to the extent they may think desirable in order to avert this loss.

The Insurance Institution can effect the cure by placing the sick person in a hospital or in an establishment for convalescents. If the sick person is married, if he has a household of his own, or if he is a member of the household of his people, his consent to this step is required.

If the Insurance Institution orders a cure to be entered upon, the obligations of the sick fund towards the insured person pass to the Institution from the commencement of this curative course to its conclusion, in the case of such insured persons as come under the provision against illness, under the Laws either of the Empire or State.

The sick fund has to indemnify the Insurance Office to the amount of the payment which the insured person could claim from it.

During the cure, relief has to be paid to such persons as are dependent upon the insured person, and for whose maintenance the insured person has hitherto provided out of his earnings, as also when the insured person does not come under the provisions for sickness under the Laws of the Empire or State. Relief of this nature, in so far as the insured person had to be tended under the provisions for sickness of the Laws of the Empire or State, amounts to the half of the money he ought to receive during the legal time of the sick relief, and otherwise to a fourth of the standard daily wages of ordinary day labourers in the locality of his last employment or of his last abode. If the insured person is in receipt of an infirmity pension, the same can be also reckoned for the relief of persons dependent upon him.

Sec. 19.—The Insurance Institution which causes a cure to be entered upon is authorised to transfer the provision for the sick person to the sick fund to which he belongs or last belonged, to the extent which the Insurance Institution considers fitting. If a burden is thereby imposed on the fund which exceeds the extent of the provision to be made by it according to law or statute, the Insurance Institution has to make good the surplus costs arising. If the obligation of provision on the part of the sick fund no longer existed, the Insurance Institution, by awarding the services specified in Sec. 6, par. 1, of the Sickness Insurance Law,

has to indemnify it with half of the money paid to the sick person; and if the insured person is placed in a hospital or in an establishment for convalescents, one and a-half times the amount of that money, in so far as greater expenses are not proved.

Sec. 20.—As funds for sick persons, in the meaning of the regulations of Secs. 18 and 19, are to be considered also those auxiliary funds which possess the official certificate provided for in Sec. 75A of the Insurance Law against Sickness.

Sec. 21.—If the illness, on account of which the cure is entered upon, is due to an accident which entitles to compensation under the Imperial laws on accident insurance, and if the entering upon a state of incapacity to earn a livelihood (Secs. 15 and 16) is prevented by the curative course, and, at the same time, a burden to the person upon whom the cost of indemnification in cases of accident insurance has taken place from the fact of the accident compensation having been withheld altogether or granted in part only, then the Insurance Institution has a claim against this person for reimbursement of the costs of the cure to the extent provided in Sec. 19, sentence 3. A re-imbursement of the costs of the cure, which arose before the beginning of the fourteenth week after the accident occurred, cannot be claimed.

For the claims of the insured on the person liable for the accident insurance, the taking over of the cure by the Insurance Institution is to be considered as equivalent to its being taken over by such person.

Sec. 22.—If the insured in consequence of the illness becomes incapable of earning a livelihood, he can, in cases where he has declined without good cause to follow the measures adopted by the Insurance Institution in accordance with Secs. 18 and 19, be deprived for a time of the infirmity pension either wholly or partially, in so far as these consequences were pointed out to him, and if it is proved that his incapacity to earn a livelihood is the result of his own conduct.

Sec. 23.—Disputes arising out of the regulations in Secs. 18, 19, 20, and 22, between the Insurance Institution and the insured, will be decided by the supervising authority of the Insurance Institution so far as they are not disposed of by fixing the amount of the pension.

Disputes arising out of regulations in Secs. 18, 19, 20, and 22, between the Insurance Institution and the Sick Fund Institution will be settled, so far as they concern the enforcement of rights granted to the Insurance Institution by the supervising authority of the Sick Fund Institution concerned, and where it is question of claims for compensation, by the course of procedure laid down for disputes in the administration; or, when such does not exist, also by the supervising authorities of the Sick Fund concerned. Their decision is, in the first case, final; in the latter case, it can be appealed against, within a month after being delivered, by the means laid down in Secs. 20 and 21 of the "Gewerbeordnung."

Disputes as to claims for compensation, in the cases of Sec. 21, par. 1, will be decided by the Imperial Insurance Office.

Sec. 24.—By statutory regulation of a community for their district or of a wider Communal Union for its district or portions of the same it can be decided (in so far as it is the local custom that the wages of workmen employed in agricultural or forest work are paid wholly or partially in kind) that those recipients of pension living in the district, as workmen in agricultural or forest work, shall draw it wholly or partially in kind up to two-thirds of its amount. The value of the payments made in kind will be reckoned according to the average prices. The same will be fixed by the higher administrative authorities. The regulation of this point by statute requires the sanction of the higher administrative authority.

For such persons as may not by order of the competent authority be served with spirituous drinks in public bars, on account of habitual drunkenness, the pension is to be paid, in those communities where such a regulation has been adopted and also in the absence of the conditions of par. 1, to its full value in kind.

The claim to the annuity passes, for the amount in which delivery in kind has been granted, to the Communal Union for the district of which such a regulation has been adopted, and the latter is responsible for the deliveries in kind.

The person entitled to draw a pension, to whom the foregoing regulation is to be applied is to be informed of the same by the Communal Union.

The person entitled to draw a pension is entitled, within two weeks after this information being given, to appeal against the decision of the Communal supervising authority. In the same way, all other disputes will be settled which arise out of the application of these regulations between the person entitled to draw a pension and the Communal Union.

As soon as the claim to annuity is finally established, the Insurance Institution has, at the request of the Communal Union, to inform the postal authorities of the same in due course.

Sec. 25.—On the basis of statutory regulation of the Insurance Institution the directorate can grant to the recipient of a pension if he request it, instead of the pension, his admission at the cost of the Insurance Institution into a home for the infirm or similar institutions supported by third persons. The person thus accommodated is bound to renounce the pension for a quarter of a year; and, if he does not withdraw the declaration a month before the expiration of this period he has to give up the pension for a further quarter of a year.

Sec. 26.—If the person entitled to receive a pension is a foreigner he can, in case he gives up his residence in the German Empire, be disposed of by paying him three times the amount of one year's contribution. By decision of the Federal Council this regulation can be made not to apply to certain frontier countries or to the subjects of such foreign States who by their legislation grant a corresponding provision for German workmen in the case of their inability to earn a livelihood or of old age.

Sec. 27. *Manner of raising the Funds to effect Insurance.*—The

funds required for the provisions of this Law will be provided by the Empire, by the employers, and by the insured persons.

The supply of funds on the part of the Empire is provided by grants to the pensions actually to be paid in each year (Sec. 35); and on the part of the employers and the insured it is effected by current contributions.

The contributions devolve on the employer and on the insured person in equal shares (Secs. 142, 144, 154) and are to be paid for every week (Sec. 30).

Sec. 28. *Conditions necessary to establish the Claim.*—To acquire a claim to an infirmity or to an old age pension, beyond furnishing proof either of inability to earn a livelihood or of the age provided by law, the necessary precedents are:—

(1) The lapse of the prescribed time during which contributions shall have been paid.

(2) The due payment of contributions.

Sec. 29. "*Time of Waiting to establish a Claim to Pension*" ("Wartezeit").—The time during which contributions shall have been paid before establishing a claim, amounts to:—

(1) In the case of the infirmity pension, when at least 100 contributions (on the basis of the insurance obligation) have been paid, to 200 contributory weeks.

(2) In the case of the old age pension to 1,200 contributory weeks.

The contributions paid for voluntary insurance (Sec. 14) are added to the "time of waiting," for the infirmity pension, only when at least 100 contributions have been paid under circumstances establishing the insurance obligation or the right of self-insurance.

The prescription of par. 2 does not apply to contributions which have been voluntarily paid by the insured person within the first four years after the obligatory insurance for his particular calling has come into force.

Sec. 30. *Payment of Contributions.*—For each week in which the insured person has been in work or employed on service, establishing the insurance obligation, an insurance contribution has to be paid (contributory week). The contributory week begins with the Monday of each calendar week.

Those completed weeks shall be reckoned as contributory weeks, without actual contributions needing to be paid, during which insured persons—

(1) For the purpose of fulfilling their military duties in times of peace, of mobilisation, or of war have entered the army or navy;

(2) Have in times of mobilisation or of war performed voluntary military services;

(3) Have been prevented by certified illness, accompanied by temporary inability to earn a livelihood, from continuing to work in their calling or profession.

This is taken into account, however, only in the case of such persons who, before this occurs, have taken up as a calling one that is not merely temporary and which entails obligatory insurance.

The duration of an illness is not to be reckoned as contribution

time when the person concerned has acquired the illness intentionally, by committal of a crime (established as such by judgment of the penal courts) by culpable participation in fights or scuffles, or by drunkenness.

With illnesses which last, uninterruptedly, longer than a year, the duration of the illness beyond this time is not reckoned as contribution time.

The time of convalescence following an illness is considered as equivalent to the illness. The same holds good in the case of ordinary births, for the duration of the time of the inability to earn a livelihood resulting therefrom, but reckoned at most for six weeks from the date of the confinement.

Sec. 31.—As proof of an illness (Sec. 30) it suffices to produce the certificate of the directors of that sick fund (Sec. 166) or that of the managers of that institution for auxiliary funds, registered or established in accordance with the law of the land to which the insured person has belonged. For that time, however, which is in excess of the duration of the sick relief to be awarded by the funds in question as also in the case of those persons who have not belonged to such a fund, a certificate of the parish authority is necessary. The directors of such institutions are bound by their office to give these certificates to the insured immediately after the termination of the sick relief or of the provision during the time of convalescence; and they can be constrained to do this by the supervising authorities by infliction of a fine up to 100 marks.

For persons employed in works carried on by the Empire and by the State, the above-mentioned certificates can be made out by the superior official authorities. In these cases the Sick Fund Institution, by permission of the supervising authority, need not grant the certificate.

The production of the military papers is proof of military services rendered.

Sec. 32. *Amount of the Contributions.*—The contributions to be paid for the contributory week are fixed by the Federal Council according to the wages-classes (Sec. 34) beforehand for a definite period of time; in the first instance till December 31, 1910, and after that time for subsequent periods of 10 years.

The contributions are to be so apportioned that they will cover the capital value of the pensions chargeable to the Insurance Institution, the reimbursements of contributions, and the other expenses of the Insurance Institution.

In the different wages-classes the contributions for the separate sets of insured persons are to be equally apportioned, and they are to be graduated solely according to the average amount of pensions to be awarded in the same by the Insurance Institution.

Before the expiration of the period of time, specified in Div. 1, the Imperial Insurance Office has to test the sufficiency of the contributions to cover the cost. At the same time, deficits and surpluses which have arisen from the collection of contributions up to that time are to be so dealt with that the new contributions effect a readjustment, with due regard to the working of Sec. 125.

Until other contributions are fixed, every Insurance Institution is to collect in weekly contributions :—

Wages-Class.	Amount.	
	Currency.	Sterling (about).
	Pfennige.	*d.*
I	14	1¾
II	20	2½
III	24	3
IV	30	3¾
V	36	4½

Any change in the amount of the contributions requires the consent of the Reichstag.

Sec. 33. *Common Incidence and Special Incidence of Costs.*— Every Insurance Institution manages its revenues and its capital (both joint and special) independently. Out of the same are to be covered the common cost to be met by all parties interested in the insurance (common incidence), and the special incidence of cost remaining to the separate parties interested in the insurance (special incidence).

The common incidence of cost consists of three-fourths of all the old age pensions of the fundamental sums (" Grundbeträge ") of all infirmity pensions, of the increase of pensions in consequence of weeks of sickness (Sec. 40, par. 1) and the rounding off of the pensions (Sec. 38). All other obligations constitute the special incidence of cost of the Insurance Institutions.

For covering the common cost, four-tenths of the contributions are to be set aside from January 1, 1900, in the books in every Insurance Institution (joint capital). The joint capital is to be credited with interest by the Insurance Institutions on the amount shown by its books. The rate of interest is fixed by the Federal Council for the periods specified in Sec. 32, par. 1, uniformly for all Insurance Institutions.

If, at the expiration of the periods specified in Sec. 32, par. 1, it transpires that the joint capital does not suffice or is not required to cover the common cost, the Federal Council has to decide for the next following period on the amount of the proportion of the contributions to be set aside in the books for the joint capital for the purpose of readjusting the deficits or surpluses that have arisen.

An increase of the share of the contributions to be set aside in the books for the joint capital, requires the consent of the Reichstag.

The entire capital of the Insurance Institutions accumulated on December 31, 1899, and further the capital of the Insurance Institutions accumulated at the expiration of the periods specified in Sec. 20, par. 1, in so far as it is not set aside in the books for the

common cost, may not be applied to covering the common incidence of cost.

Sec. 34. *Wages-Classes.*—According to the amount of the annual earnings from work, the following wages-classes are constituted for the insured:—

Wages-Class.	Currency.		Remarks.
	From—	To—	
	Marks.	Marks.	
I	..	350*	About 17*l.* 10*s.*
II	350	550	„ 27*l.* 10*s.*
III	550	850	„ 42*l.* 10*s.*
IV	850	1,150	„ 57*l.* 10*s.*
V	1,150†	..	Over 57*l.* 10*s.*

* Inclusive. † Upwards.

The average amount, and not the amount of the actual annual earnings from work, subject to the deviations arising from the following regulations, determines the wages-class to which the insured person is to belong.

As annual earnings from work are reckoned:—

(1) For members of local, works (factory), building, or guild sick funds, 300 times the amount of the average daily wages determining their sick fund contributions or the actual earnings from work (Secs. 20, 26A, par. 2, fig. 6 of the Insurance Law against Sickness).

(2) For persons employed in agriculture or forestry, in so far as they do not belong to a sick fund specified under No. 1, an amount to be fixed for them as average earnings from work by the higher administrative authorities with due regard to Sec. 3; in the case of superintendents of works, however, the basis will be the annual earnings from work determined for each of them in accordance with Sec. 3 of the Law of May 5, 1886.

(3) For seamen and other persons engaged in sea navigation, insured on the basis of the Law of July 13, 1887, the average limit of the annual earnings from work has been fixed by the Imperial Chancellor or by the higher administrative authorities respectively pursuant to Secs. 6 and 7 loco citato.

(4) For members of a miners' benefit fund, 300 times the amount of the average daily earnings from work, fixed by the directors of the fund, of that class of workmen to which the insured person belongs; the sum, however, will not be less than 300 times the amount of the usual local daily wages of an ordinary daily workman of the place of employment (Sec. 8 of the Sickness Insurance Law).

(5) For the rest, 300 times the amount of the usual local daily wages of ordinary day workmen at the place of employment (Sec. 8 of the Sickness Insurance Law), in so far as other annual

earnings from work are not fixed for separate callings by the higher administrative authorities.

Teachers and tutors belong to the fourth class in so far as annual earnings from work of more than 1,500 marks (75*l.*) are not proved. In so far as a fixed cash payment is agreed on beforehand for weeks, months, quarters, or years, and when this is higher than the average amount determined for the insured person in accordance with par. 2, this payment is to serve as the basis.

The insured person can claim insurance in a higher wages-class than that which, according to the foregoing regulations, would accrue to him. In these cases, however, the proportion of the contribution falling to the employer, in so far as the insurance in the higher wages-class is not agreed upon by the employer and the insured person, is to be reckoned not according to the higher but according to the wages-class properly applicable to the insured person.

The public central authorities can direct that the wages-classes and contributions (Sec. 32) applicable according to par. 2 for special places, as also the classes of insured persons who in special places come under the separate wages-classes, are to be published by the Insurance Institution in every place of its district.

Sec. 35. *Computation of the Pensions.*—The annuities will be calculated according to the wages-classes (Sec. 34) and in annual amounts. They consist of a varying amount which, under reservation of Sec. 40, par. 2, is to be provided by the Insurance Institutions and by a fixed grant from the Empire, which amounts to 50 marks (50*s.*) annually for each pension.

Sec. 36.—The portion of the infirmity pension to be provided by the Insurance Institutions is computed in such a way that increasing sums (advancing scale) corresponding to the number of the contributory weeks, are added to an initial sum ("Grundbetrag").

The initial amount of the sum is:—

Wages-Class.	Amount.	
	Currency.	Sterling (about).
	Marks.	£ *s.*
I	60	3 0
II	70	3 10
III	80	4 0
IV	90	4 10
V	100	5 0

500 contributory weeks always form the basis of the computation of the initial amount (basis) of the infirmity pension If less than 500 contributory weeks are proved, contributions of wages-class I are to be brought into account for the missing weeks; if more than 500 contributory weeks are proved, the 500 contributory weeks of the highest wages-class are always to form the basis. If for these 500 weeks different wages-classes come into

account, the average of the fundamental sums corresponding to these contributory weeks is to be taken into account as the basis.

The advancing scale amounts for each contributory week to :—

Wages-Class.	Amount.	
	Currency.	Sterling (about).
	Pfennige.	*d.*
I	3	0½
II	6	0¾
III	8	1
IV	10	1¼
V	12	1½

Only one advancing scale can be taken into account for the contributory week. If more contribution stamps have been employed than correspond to the contributory weeks that may be taken into account, and, if the wrongly employed stamps can no longer be identified, the contributions are to be reduced to the highest permissible number by the disqualification of stamps paid for the lower wages-classes.

Sec. 37.—The portion of the old age pension to be provided by the Insurance Institution amounts to :—

Wages-Class.	Amount.	
	Currency.	Sterling (about).
	Marks.	£ *s.*
I	60	3 0
II	90	4 10
III	120	6 0
IV	150	7 10
V	180	9 0

If contributions in different wages-classes come into account the average of the old age pension, corresponding to these contributions, will be awarded. If more than 1,200 contributory weeks are proved, the 1,200 contributions of the highest wages-class are to form the basis of the calculation.

Sec. 38.—The pensions are to be increased to a round sum up to full 5 Pf. for the month, and they are to be paid in monthly amounts in advance. For the calendar month in which the discontinuance of the suspension of the claim to pension is brought about, the monthly amount of pension already paid is to be left.

Sec. 39.—In the calculation of the pension for the insured

person, who has participated in one of the funds admitted by Secs. 8, 10, 11, that wages-class will be taken into account for each week of such participation after January 1, 1891, to which the same would have belonged in accordance with the wages actually drawn by him if he had been insured in an Insurance Institution. If the insured person has belonged at the same time to a miner's benefit fund or to a local, works (factory), building, or guild sick fund, the wages-class to be brought into account is determined under the regulations of Sec. 34, par. 2, figs. 1 or 4, and of Sec. 34, par. 3.

Sec. 40.—For the duration of certified illnesses and military services, reckoned according to Sec. 30 as contributory time, wages-class II is to form the basis for calculating the pension.

The Empire is responsible for the portion of the pension falling to the period of military services (Sec. 125).

Sec. 41.—The infirmity pension begins with the day on which the loss of the ability to earn a livelihood commences. As this point of time is reckoned, in so far as another is not fixed upon in the decision, the day on which the request for the awarding of the pension was lodged with the proper authority (Sec. 112, par. 1).

The old age pension commences, at the earliest, with the first day of the seventy-first year of life.

The annuity will not be awarded for a period covering more than a year previous to the receipt of the request for the awarding of a pension.

If an insured person dies, whose pension request was lodged with the competent authority during his life, the husband or wife is in the first place entitled to carry on the procedure, and, in case the pension is awarded, to draw the amount of pension due up to the day of death, in so far as the husband or wife has lived in domestic intercourse with the person entitled to the pension until his death; if such does not exist, the legal succession devolves according to the regulations of the Civil Law.

Sec. 42. *Reimbursement of the Contributions.*—Females who contract a marriage, before a decision awarding them a pension (Secs. 15, 16) has been delivered to them, have the right to claim the reimbursement of half the contributions made for them, if the same have been made for at least 200 weeks before the marriage takes place. To avoid refusal, this claim must be lodged before the expiration of a year after the day of the marriage. The amount to be reimbursed will be increased to a round sum up to a full Mark (1*s.*). The reversion, established by the former insurance conditions, becomes void with the reimbursement.

Sec. 43.—If insured persons become permanently unable through an accident to earn a livelihood within the meaning of this Law, and if they are not entitled, according to Sec. 15, par. 2, to claim an infirmity pension for the time of the drawing of the accident pension, half of the contributions made for them is at their request to be refunded to them. To avoid exclusion from the benefit the claim must be lodged before the expiration of two

years after the accident. The regulations of Sec. 42, par. 1, sentence 3, and par. 2 are applicable.

Sec. 44.—When a male, for whom contributions have been paid for at least 200 weeks, dies before the decision awarding him a pension has been handed to him (Secs. 15, 16), the surviving widow or, in case there is none, the surviving legitimate children under 15 years of age are entitled to claim the reimbursement of the half of the contributions made for the deceased.

If a female, for whom contributions have been paid for at least 200 weeks, dies before the decision awarding her a pension (Secs. 15, 16) has been sent to her, the surviving fatherless children under 15 years of age are entitled to claim half of the contributions paid for the deceased. Under the same conditions the surviving children, not yet 15 years old, of such a person, whose husband has kept aloof from domestic intercourse and has withdrawn from the duty of maintaining the children, have a similar claim. If the wife was, in consequence of her husband's incapacity to earn a livelihood, the supporter of the family, the surviving widower is entitled to a similar claim to reimbursement.

To avoid exclusion from the benefit the claim for reimbursement must be lodged before the expiration of a year after the death of the insured person. The sum to be reimbursed will be increased to a round sum of a full Mark (1*s.*).

If a course of procedure for fixing a pension is already pending at the death of the insured person, the claim for reimbursement excludes the claim of the heirs to the outstanding amount of pension so long as the decision recognising the latter has not been arrived at.

The foregoing regulations are not applicable when, by reason of the death, a pension on the basis of the Accident Insurance Laws is awarded to the survivors.

Sec. 45.—By unanimous decision of the directors and of the committee it can be decided that the surpluses of the special capital of an Insurance Institution over the permanent requirements for covering their obligations can be applied to other services than those provided for in the Law in the economic interest of the pension recipients of insured persons, and of their dependents provided for by the Insurance Institution.

Such decisions require the sanction of the Federal Council. The sanction can be withdrawn if the special capital of the Insurance Institution no longer suffices to permanently cover their obligations.

Sec. 46. *The Extinction of the Reversion.*—The reversion arising out of the insurance obligation can be extinguished if, during two years after the date specified on the receipt card (Sec. 131), employment or service conditions establishing the insurance obligation, on the basis of which contributions have been paid, have not amounted altogether to 20 contributory weeks. The same takes place if re-insurance has not been effected (Sec. 14, par. 2).

As equivalent to the contributory weeks in the meaning of the above paragraph will be considered the periods—

(1) Which are reckoned as contribution times according to Sec. 30.

(2) During which the person, with a reversionary claim, drew an accident pension for a diminution to the extent of at least 20 per cent. of the ability to earn a livelihood, or drew infirmity or old age pensions from benefit funds of the kind specified in Secs. 8, 10, 11, 52, without at the same time carrying on an occupation entailing obligatory insurance in accordance with this Law.

In cases of self-insurance and its continuance (Sec. 14, par. 1), at least 40 contributions must be paid for the maintenance of the reversion during the space of time specified in par. 1.

The reversion is again revived as soon as, by re-entering an occupation entailing obligatory insurance or by voluntary payment of contributions, the state of insurance is renewed whereby a period of 200 contributory weeks has been completed.

Sec. 47. *Right of withdrawing the Infirmity Pension.*—If a change arises in the circumstances of the recipient of an infirmity pension which proves him to be no longer incapable of earning a livelihood (Secs. 15, 16) then the pension can be withheld from him.

If there is reason to believe that the recipient of an infirmity pension, by undergoing a cure would again acquire the capacity to earn a livelihood, the Insurance Institution can for this purpose cause a cure to be entered upon. Then the regulations of Sec. 18, pars. 2 to 4, Secs. 19 to 21, and 23, are applicable with the condition that the infirmity pension can take the place of the relief of the dependent person. If the pensioner has without good reason refrained from following such measures of the Insurance Institution, the pension can be withheld from him for a time wholly or partially, in so far as these consequences were pointed out to him, and if it is proved that he, by his conduct, has frustrated the re-attainment of the capacity to earn a livelihood.

The withdrawal of the pension comes into operation at the expiration of the month in which the decision was arrived at. If the pension is again awarded; if, in place of an infirmity pension awarded in accordance with Sec. 16, a pension for permanent incapacity to earn a livelihood (Sec. 15) is awarded; or if an old age pension is awarded, the time of the previous drawing of the pension as well as a certified period of illness (Sec. 40, par. 1) is to be reckoned for the insured person. The prescriptions of Sec. 30, par. 5, and of Sec. 46, pars. 1, 3, do not apply to this period.

Sec. 48. *Suspension of the Pension.*—The right to draw a pension is suspended:—

(1) For those persons who draw a pension on the basis of the regulations of the Imperial Law on Accident Insurance so long and in so far as the accident insurance, including the pension granted to them in accordance with the present Law, exceeds seven and a-half times the amount of the initial sum ("Grundbetrag") of the infirmity pension (Sec. 36, pars. 2, 3).

(2) For those persons specified in Secs. 5, 6, par. 1, Sec. 7, so long and in so far as the pensions, half-pay or similar receipts, including the pension granted to them in accordance with the present Law, exceed the maximum amount specified in Fig. 1.

(3) So long as the recipient of a pension undergoes imprisonment for a period exceeding one month or so long as he is an inmate of a penitentiary or a house of correction.

(4) So long as the recipient of a pension has not his ordinary abode in this country. By decision of the Federal Council this regulation can be made non-applicable to certain frontier territories, or to such foreign States by the legislation of which German workmen are guaranteed an adequate provision in the case of incapacity to earn a livelihood and in cases of old age.

If in the cases under Fig. 3, the person entitled to a pension has a family residing in this country for whose maintenance he has hitherto provided from his earnings from work, the pension is to be assigned to the family. While the infirmity pension is being drawn, the claim to an old age pension is suspended. For this case the regulation of Sec. 38, sentence 2, is not applicable.

Sec. 49. *Relationship to other Claims.*—The obligation, based on legal prescription, of communities and associations for the relief of the poor to relieve necessitous persons, as well as other lawful and statutory obligations based on contract for provision for old, sick, or necessitous persons or persons incapable of earning a livelihood, are not affected by this Law.

If poor relief has been given by a community or an association for the relief of the poor, to necessitous persons for a period during which these persons had or still have a claim to an infirmity or an old age pension, they have to be indemnified for it by an assignment of the amount of the pension.

If the relief is temporary, at most three monthly instalments of the pension and in no case more than one-half altogether can be claimed as indemnification.

If the relief is continuous, there can be claimed as indemnification for its duration when the relief consists in providing maintenance in an institution, the continuous assignment of the full pension, and in other cases the continuous assignment of at most one half of the pension.

Sec. 50.—The application for assignment of the pension contributions (Sec. 49, pars. 2 to 4) is to be sent in to one of the authorities specified in Sec. 112, par. 1; in so far as it is question of compensation for a temporary relief, the claim is to be lodged at latest within three months after the termination of the relief, in order to avoid rejection.

The communities and associations for the relief of the poor are also entitled to lodge a claim for compensation when the necessitous person, who was entitled to claim an infirmity or old age pension, died before applying for the pension. The regulation in Sec. 44, par. 4, is similarly applicable.

Disputes, arising among interested persons as to assignment of the compensation amounts, will be decided by the ordinary

procedure for administrative disputes; or if such does not exist, by the supervising authorities superior to those entitled to compensation. The decision of the latter can be appealed against, within one month after the announcement of decision by means of an appeal in accordance with Secs. 20, 21, of the Industrial Law.

Sec. 51.—The regulations of Secs. 49, 50, also apply to manufacturers and benefit funds which legally fulfil the obligation devolving on communities and associations for the relief of the poor, for the relief of necessitous persons.

Sec. 52.—Factory funds, miners', seamen's, and other benefit funds, existing for industrial, agricultural or similar undertakings, which award pensions or capital sums in cases of old age or incapacity to earn a livelihood to their members insured in accordance with the regulations laid down by the Imperial Laws, are entitled to reduce this relief, for such persons as on the basis of Imperial legal regulations have a claim to infirmity or old age pensions, by the amount of the latter or to a less amount, in so far as at the same time the contributions of the manufacturers and of the members of these funds or in case of acquiescence on the part of the manufacturers at least those of the members of the funds, are reduced in corresponding proportions. The reduction does not extend to statutory obligations falling on the funds, and which have been granted from the funds before the particular decision of the proper organ or before January 1, 1891.

The sanction of the proper State authorities is required for the alteration of the statutes. They are empowered to undertake necessary alterations of the statutes which will be valid in effect, in so far as the manufacturers' contribution to the above-mentioned benefit funds, or the majority of the members of the fund have proposed the alteration which had been refused by the proper officials of the fund.

No reduction of the contributions is necessary when they are economised by the diminution of the amount of relief and are to be devoted to other benevolent organisations for superintendents of works, workmen or their survivors; and this further application of the sums is regulated by the code of rules, sanctioned by the supervising authority, or in so far as the same amount of contribution as before is required to cover the services remaining to the benefit fund.

Sec. 53.—The regulations of Sec. 46, fig. 2 and of Sec. 52 are also applicable to the benefit funds existing for the infirmity and old age provisions, for which an obligation to join them exists according to local statutory regulations.

Sec. 54.—In as far as those persons entitled to draw infirmity pensions, in accordance with the Imperial regulations, have a right to a legal claim for compensation against a third party for the damage arising from infirmity, the same devolves on the Insurance Institution up to the amount of the pension for which it is liable.

Sec. 55. *Claims may not be Pledged.*—The conveyance of the

claims, arising from the regulations in conformity with the Imperial Laws, to a third party as also their being given or taken as pledges can only be legally effected under the following circumstances:—

(1) To cover an advance which has been made to the recipient entitled to a a pension (at his request and before any assignment of that pension) by his employer or by an office of the Insurance Institution or by a member of such an organ.

(2) To cover the demands specified in Sec. 850, par. 4, of the Law for Civil Cases, as published on May 20, 1898.

(3) To cover the demands of the Communal Bodies and Associations for the Relief of the Poor, entitled to compensation in accordance with Secs. 49, 51, as also of the manufacturers and Funds Institutions taking their place.

The claims to pensions may only be taken into account for demands for compensation for accident pensions, and indemnifications can only be granted in so far as the claim in accordance with Secs. 54, 113, par. 2, has been transferred to the Insurance Institutions for contributions owing, for advances paid, for pension amounts paid in error, for costs of proceedings to be refunded, and for fines inflicted by the offices of the Insurance Institutions.

By way of exception the recipient entitled to a pension can transfer his claim wholly or partially to others, in so far as this is sanctioned by the lower administrative authorities.

II. *Organisation.*

Sec. 56.—The infirmity insurance is conducted, with the co-operation of the State administrative authorities and of the Postal authorities, by Insurance Institutions and their offices (Sec. 65 et seq.), by Courts of Arbitration (Sec. 103 et seq.), and by the Imperial Insurance Office and the State Insurance Offices (Secs. 108, et seq.).

(A.) *Co-operation of the State Administrative Authorities.*

Sec. 57.—Besides the other tasks resulting from this Law there devolves on the lower administrative authorities (Sec. 169):—

(1) The receipt and preparation of applications for the granting of infirmity and old age pensions (Sec. 112), or for reimbursements of contributions (Sec. 128), and the consideration of applications for the granting of pensions.

(2) Considering as to withholding of infirmity pensions (Secs. 47, 121).

(3) Considering as to the discontinuance of pension payments (Secs. 48, 121).

(4) Advising the directorate of the Insurance Institution of the cases coming to the knowledge of the administrative authorities, in which there is ground for believing that the insured persons would be prevented, by a curative course, from soon becoming incapable of earning a livelihood (Sec. 18); advising

whether persons in receipt of infirmity pensions will, by undergoing a curative course, regain their capacity to earn a livelihood (Sec. 47, par. 2); advising that the infirmity pension is to be withdrawn (Sec. 47, par. 1); or that the payments of pensions are to be suspended (Sec. 48).

(5) Giving information on all matters concerning infirmity insurance.

Sec. 58.—In the cases of Sec. 57, fig. 1, the passing of an opinion on the insurance obligation (Secs. 1–7) or the right of insurance (Sec. 14) has to extend to the measure of incapacity of the applicant for pension to earn a livelihood (Secs. 5, 15, 16), as also whether and in how far the rights in Secs. 17 and 22 are to be made use of.

In the cases of Sec. 57, fig. 2, namely, the judging as to the incapacity of the pension recipient to earn a livelihood (Sec. 47, par. 1) extends also as to whether and in how far use is to be made of the authority conferred by Sec. 47, par. 2, sentence 3.

The judgment given must further also extend to all those questions which seem of import for the decision of the directorate of the Insurance Institution.

Sec. 59.—If the lower administrative authorities in the cases of Sec. 57, figs. 1, 2, are of opinion that judgment is to be given against the granting of a pension or for the withholding of an infirmity pension they have—before giving their judgment—to discuss orally the questions specified in Sec. 58 in consultation with a representative of the employers and also with a person representing the insured (Sec. 61). At their request or when the elucidation of the real state of the case requires it, the applicant for a pension or the recipient of a pension is to be invited to an oral consultation; in every case he has to be informed of its date. It must be made clear in the judgment how each of the two representatives has voted. The directorate of the Insurance Institution is entitled to demand the judgment of the lower administrative authorities in the form given in par. 1, also in other cases than those specified in Secs. 57 and 58, and on other questions.

Sec. 60.—The higher administrative authorities (Sec. 169) can, after hearing or at the request of the directorate for the district of an Insurance Institution or for portion of the same, designate certain parish authorities as lower administrative authorities in the meaning of Sec. 57, and commission them to conduct the business contemplated in Secs. 57 and 58.

Sec. 61.—For every district of the lower administrative authorities (Sec. 57) representatives of the employer and of the insured are elected; their number amounts, so long as a higher number has not been fixed by that authority which has issued the election order (Sec. 63), to four each both from the class of the employers and from the insured. The regulations of Secs. 87–94 and 97 are correspondingly applicable.

Sec. 62.—The representatives of the employers and of the insured are elected by the directorates of the local, works (factory),

building, and guild sick funds, miners' benefit funds, seamen's benefit funds and other legal associations of seamen for watching the interests of seamen existing in the district of the lower administrative authorities, also by the directorates of those registered relief funds or relief funds which are established on the basis of local regulations and are in possession of the certificate provided for by Sec. 75A of the Sickness Insurance Law and whose district does not extend beyond the district of the lower administrative authorities. In so far as persons specified in Sec. 1 do not belong to such funds, participation in the election is, in accordance with the regulation of the Government of the country, to be accorded to the representatives of the wider communal unions or to the administrations of the parish sickness insurance or establishments of a similar kind which conform to the laws of the country and is to correspond to the number of these persons. In so far as the directorates of the specified funds and associations are composed of representatives of the employers and of representatives of the workmen, the members of the directorate, belonging to the employers, take part only in the election of the representatives of the employers; the members of the directorate, belonging to the insured, only take part in the election of the representatives of the insured. Directorates in which employers are not represented take part only in the election of the representatives of the insured. Directorates in which workmen are not represented take part only in the election of the representatives of the employers. Directorates of such sick funds, for the members of which a special fund in the meaning of Secs. 8, 10, 11, exists, are not entitled to take part in the elections.

The representatives of the employers and of the insured must reside in the district of the lower administrative authorities, and, to the extent of at least a half of their members, actually at the place itself or within 10 kiloms. of the same; and they may not be members of the directorate (Sec. 73) or of a court of arbitration (Sec. 103).

Sec. 63.—The election of the representatives proceeds according to detailed regulations of an election order, which is to be issued by the proper public central authorities for the locality where the Insurance Institution exists or by the authorities designated by them under the direction of their agent. In the case of joint Insurance Institutions the election order, in default of agreements among the Governments concerned, is to be issued by the Imperial Chancellor and the election conducted by an agent of the same.

For the purpose of the election of the representatives, the district of the lower administrative authorities can be divided into smaller election districts.

Disputes as to the election will be decided by the authorities who have issued the election order.

Sec. 64.—The representatives of the employers and of the insured are to be bound by the lower administrative authorities to the conscientious fulfilment of their obligations.

The higher administrative authorities are to determine on the

order in which the representatives are to be called in to the meetings.

The salaries, &c. (Secs. 61, 92), of the representatives as well as the other cash disbursements, arising from the procedure, are to be met by the Insurance Institution.

The lower administrative authorities are competent to take the depositions of witnesses and experts but not on oath.

The directorate of the Insurance Institution is competent, at the request of the lower administrative authorities, to charge the interested parties with such costs of the procedure as have been occasioned wantonly by them or by a conduct calculated to protract the case or mislead the officials.

Otherwise the course of procedure before the lower administrative authorities will be regulated by the public central authorities.

(B.) *Insurance Institutions.*

1. *Establishment.*

Sec. 65.—The Insurance Institutions will be established, in accordance with the regulations of the Governments of the country, for the wider Communal Unions of its territory or for the territory of the Confederated State or parts of the same.

Also a joint Insurance Institution can be established for several Confederated States or portions of the territory of the same as also for several wider Communal Unions of a Confederated State.

All those persons who are employed in its district are to be insured in the Insurance Institution. The provisions of Sec. 5A of the Insurance Law against Sickness are applicable to the fixing of the place of employment. In so far as the employment takes place in a manufactory situated in the district of another Insurance Institution the insurance can, with the consent of the Insurance Institution concerned, also be effected in the Insurance Institution at the seat of the manufactory. This consent must be given at the request of the employer liable to pay contributions, if the persons employed are members of a sick fund established for these works (factory). If the employment is temporarily abroad, but in connection with a trade situated in the country, the insurance is effected in the Insurance Institution where the works are situated.

In the case of foreign ships engaged in internal navigation the Insurance Institution in whose district the ship first enters when crossing the frontier is considered as the place of employment of the crew, &c.

Sec. 66.—The sanction of the Federal Council is required for the establishment of an Insurance Institution. When sanction is not accorded the Federal Council can, after hearing the Governments concerned, order the establishment of Insurance Institutions.

Sec. 67.—The seat of the Insurance Institution will be determined by the Government of the country.

If the Insurance Institution is established for several Confederated States or portions of this territory, its place in default of agreement among the Governments concerned is determined by the Federal Council.

Sec. 68.—The Insurance Institution can in its own name acquire rights and contract liabilities, sue and be sued in a court of law. In cases of its liabilities creditors can place a lien on the capital of the Institution; and in so far as the same does not suffice to cover the liabilities of the Insurance Institution, the Communal Union for which the Insurance Institution is responsible and in the case of its inability to pay or when the Insurance Institution is established for the Confederated State or a portion of the same, the Confederated State is responsible.

If the Insurance Institution is established for several Communal Unions of Confederated States or parts thereof, the liability is apportioned, in the case of inadequacy of the capital of the Insurance Institution, in accordance with the proportion of the population—as fixed by the last census—of those districts concerned with the Insurance Institution.

The means of the Insurance Institution may not be applied for other purposes than those provided for in this Law. Its receipts and disbursements are to be accounted for separately; its cash balances in hand are to be kept separate.

The Insurance Institution may not undertake business other than that assigned to it by this Law.

Sec. 69.—The costs arising from the first establishment of the Insurance Institution are to be advanced by the Communal Union or by the Confederated State for which it is established. For joint Insurance Institutions the advances are to be made, in default of agreement, in the proportion provided by Sec. 68, par. 2.

The advances made are to be refunded by the Insurance Institution out of the first insurance contributions received.

2. *Code of Rules.*

Sec. 70.—For each Insurance Institution a code of rules is to be drawn up which will be decided upon by the committee (Sec. 76). This code must specify:—

(1) The number of the representatives of the employers and of the insured belonging to the directorate;

(2) The number of members, the obligations and privileges of the committee as also the manner of convening. The appointment of its chairman, and as to the manner of arriving at decisions.

(3) The form in which the directorate has to set forth its declaratory act (notification) and in which it has to sign for the Insurance Institution; also the manner in which the decisions

of the directorate and of their representatives is to be publicly announced.

(4) The representation of the Insurance Institution as regards the directorate.

(5) The number of the "Beisitzer" (*i.e.*, representatives of the employers and of the workmen) in the Courts of Arbitration, which must amount to at least 4 from the class of the employers and 4 from that of the insured; and the order in which the "Beisitzer" are to be called in to the sittings.

(6) The amount of the indemnifications to be awarded in accordance with Sec. 74, par. 3, and Sec. 92.

(7) The manner of the drawing-up of the estimate.

(8) The manner of drawing up and passing on the annual accounts, in so far as regulations are not made for this by the proper public central authorities at the place where the Insurance Institution is situated.

(9) The method of publication of the balance sheets.

(10) The public newspapers through which announcements have to be made.

(11) The conditions under which an alteration of the code of rules can be made.

Sec. 71.—To the committee must be reserved:—

(1) The election of the non-official members of the directorate as also the election of the "Beisitzer" in the Courts of Arbitration.

(2) The fixing of the estimates.

(3) The examination of the annual accounts and the advancing of objections against the same.

(4) The acquiescence in the decisions of the directorate concerning the acquisition, the alienation, or the encumbering of the ground property of the Insurance Institution in so far as, in the conscientious judgment of the directorate, there is no danger in delay.

(5) The deciding as to the formation of re-insurance associations (Sec. 99).

(6) The alteration of the code of rules.

(7) The supervision of the conduct of business by the directorate.

A copy of the draft of the yearly estimate (Fig. 2) is to be submitted to the supervising authority at the latest two weeks before the meeting of the committee called to fix the same. The former is entitled to raise objections in so far as the estimate or parts of the same do not conform with the legal or statutory regulations. The chairman of the committee is bound to object, in conformity with Sec. 47A, to the decision of the committee not to take into consideration the objections of the supervising authorities.

Sec. 72.—The code of rules requires for its validity the sanction of the Imperial Insurance Office. The resolutions passed by the committee on the code of rules with the minutes,

are to be handed by the directorate to the Imperial Insurance Office within a week.

An appeal can be made to the Federal Council against the decision of the Imperial Insurance Office by which approval is refused, within a period of 4 weeks from the day on which the decision is handed in to the directorate.

If no complaint is lodged within this period or if the refusal to sanction the code of rules is upheld by the Federal Council, the Imperial Insurance Institution has to order within four weeks, another resolution to be arrived at. If sanction is also finally refused to the code of rules then drawn up afresh or if the committee does not arrive at another decision as to the code of rules, such decision will be determined upon by the Imperial Insurance Office. In the latter case the Imperial Insurance Office has, at the expense of the Insurance Institution, to take the necessary steps for the carrying out of the code of rules. The sanction of the Imperial Insurance Office is required for the alterations of the code of rules. Complaint can be made to the Federal Council within four weeks from the day of delivery, against the refusal of the sanction. After the code of rules has been fixed, the directorate has to publish in the Imperial Gazette and in the paper decided on for the publication of the announcement of the public central authority, the name, place, and district of the Insurance Institution and the name of the chairman of the directorate. Public announcement of alterations is to be made in the same way.

3. *Directorate.*

Sec. 73.—The Insurance Institution will be administered by a directorate in so far as separate matters have not been transferred by law or statute to other bodies (officials).

The directorate has to represent the Insurance Institution judicially and extra-judicially. The representation also extends to those affairs and legal actions for which, according to the laws, a special authority is necessary.

Sec. 74.—The directorate of the Insurance Institution has the status of a public authority. Its affairs will be attended to by one or more officials of the wider Communal Union, or of the Federal State, for which the Insurance Institution is established. The official members of the directorate, one of whom is to be designated chairman, will be appointed in accordance with the provisions prescribed by the law of the land by the Communal Union or by the Government of the country respectively. If the district of the Insurance Institution extends over several wider Communal Unions, the officials will be appointed by the Government of the country; the latter can transfer the appointment to one of the Communal Unions. If the district of the Insurance Institution extends over the territories of several Confederated States, the appointment of the officials, in default of agreements among the Governments of the countries interested, is decided on

by the Imperial Chancellor. The salaries, pensions, &c., of the officials and of their survivors are to be reimbursed by the Insurance Institution.

Besides the above-mentioned officials, representatives of the employers and of the insured must belong to the directorate. Salaries will not be granted to them.

It can be determined by the code of rules that other persons, besides the above-mentioned, shall belong to the directorate. The same can, according to the determination of the code of rules, be salaried or unsalaried. In so far as salaries are to be granted them, the committee (Sec. 76) has to fix the conditions of appointment.

Sec. 75.—The chairman of the directorate has to raise objections, while specifying his reasons, against resolutions of the officials of the Insurance Institution which offend against the legal or statutory prescriptions so as to delay their operations. These can be contested by way of complaint to the supervising authorities.

4. *Committees.*

Sec. 76.—For every Insurance Institution a committee will be constituted consisting of at least five representatives of each of the employers and of the insured. The number of the representatives will be decided, until the code of rules is sanctioned, by the proper public central authorities for the seat of the Insurance Institution, and, later, by the code of rules itself.

These representatives will be elected by the representatives of the employers and of the insured in the case of the lower administrative authorities (Sec. 61), and by the "Beisitzer" of the pension offices (Sec. 81) separately from the employers and the insured.

Sec. 77.—The election of the representatives proceeds in accordance with the detailed regulations of an election order, which is to be issued by the proper public central authorities at the place where the Insurance Institution is situated, or by the authority appointed by them, under the direction of an agent. Where joint Insurance Institutions exist, the election order, in default of agreement among the Governments concerned, will be issued by the Imperial Chancellor, and the election will be conducted by an agent appointed by him.

For each representative at least one first and one second substitute are to be elected who have to act for him in case of his being unable to attend, and in case of withdrawal they have to step in for the rest of the election period according to the priority of their election.

Disputes as to the elections will be decided by the authority who has issued the election order.

Sec. 78.—The chairmanship of the committee is taken, till the code of rules is sanctioned, by the chairman of the directorate of the Insurance Institution. The same person summons the members of the committee. The substitutes are to be invited to

take the place of those members who are prevented from attending, and who inform the chairman in time of their absence.

The members of the committee, deliberating on the code of rules, receive for their participation in these deliberations, fees which are to be fixed by the proper public central authority for the seat of the Insurance Institution.

5. *Pension Offices.*

Sec. 79.—For the conduct of the business, devolving in accordance with Secs. 57 to 59, on the lower administrative authorities, pension offices can be established for the district of the Insurance Institution or parts thereof, by the directorate of the Insurance Institution.

The consent, however, of the committee of the Insurance Institution is necessary; besides this, in the case of Insurance Institutions for which the official members of the directorate are to be appointed by a Communal Union, the consent also of the board entrusted with the administration of the affairs of this Communal Union is necessary; increase of Insurance Institutions, however, for which the official members of the directorate are to be appointed by the Government of the country, the consent of the public central authorities is necessary, and in so far as several public central authorities are concerned, and in default of agreement among them, then the consent of the Imperial Chancellor is necessary.

The public central authorities can, in case business requires it, and especially in densely populated parts, and after hearing the directorate and committee of the Insurance Institution, as well as the board entrusted with the administration of the affairs of the proper wider Communal Union, order the establishment of pension offices for the districts of lower administrative authorities, or for separate parishes in which the conduct of business, provided for in par. 1, has not been transferred in accordance with Sec. 60 to the parish authorities. If such offices are to be established for the districts, extending to the territory of several Confederated States, the Imperial Chancellor can, in default of agreement among the Governments concerned, order their establishment.

The pension is a board (office) of the Insurance Institution and has the status of a public authority.

Sec. 80.—Besides the tasks specified in Sec. 79, par. 1, the directorate of the insurance office can with the consent of the committee transfer to the pension office the control over the payment of the contributions; in the same way and with the approval of the proper public central authorities at the place where the pension office is situated, still further duties can be transferred to the pension office by the directorate.

Sec. 81.—Each pension office consists of a permanent chairman, at least one substitute, and of "Beisitzer";* they will be given the necessary assistant officials.

* "Beisitzer" are members, sometimes non-judicial, of courts, &c.—Note by Translator.

The directorate of the Insurance Institution fixes the duration of office and the salaries of the chairman and substitutes. The appointment of the chairman and the substitutes follows, after hearing the views of the directorate through the authorities entrusted with the administration of the affairs of the wider Communal Union; for those institutions, however, in which the official members of the directorate are to be appointed by the public central authorities (Sec. 74, par. 1) the appointments are made by the latter.

The name and residence of the chairman and his substitutes are to be published in the district of the pension office by the directorate of the Insurance Institution.

If the position of chairman of the pension office is administered, as a collateral post, by an indirect or immediate official of the State, he is subject in respect of his activity as chairman of the pension office only to the disciplinary authority of his superiors in the chief insurance office.

The assistant officials of the pension office are officials of the Insurance Institution; they are appointed by the directorate of the Insurance Institution, after hearing the views of the chairman of the pension office.

Sec. 82.—The number of the "Beisitzer," so long as a higher number has not been fixed by the Insurance Institution, amounts to four each from the class of the employers and from that of the insured.

The prescriptions of Secs. 40F, 40G, find corresponding application to the election of a "Beisitzer."

Sec. 83.—The chairman, his substitutes, and the "Beitsitzer" are to be bound to the conscientious fulfilment of the duties of their offices; the same applies to the assistant officials, in so far as they have not taken the official oath as officials of the Insurance Institution. The swearing in of the chairman takes place before authorities who appoint him (Sec. 81, par. 2) or before the public official entrusted by them with this duty; the swearing in of the other persons takes place before the chairman.

Regulations are to be made in the code of rules as to the order in which the "Beisitzer" are to be called in to the debates.

The chairman fixes the payments to be granted to the "Beisitzer" (Sec. 92). The immediate supervision over the service of the assistant officials of the pension office falls to him; disciplinary punishments against them, however, in so far as they are appointed in the pension office of the chief office, are imposed by the directorate of the Insurance Institution, in other cases by their superiors in the chief office.

Sec. 84.—The prescriptions of Sec. 40D, par. 1, find corresponding application with regard to the calling upon a representative of the employers and the insured to give judgments.

The pension office is entitled to take the depositions of witnesses and experts but not on oath.

Sec. 85.—The costs of the pension office, including the salaries, &c., of the chairman, of the "Beisitzer," and of the assistant

officials, as also the cost of the course of procedure before the pension office, are borne by the Insurance Institution.

The regulation of Sec. 64, par. 5, finds corresponding application. For the rest the course of procedure of the pension office is regulated by the directorate of the Insurance Institution.

Sec. 86.—The public central authorities can transfer to pension offices, situated in the territory of the Confederated State, the power of finally deciding on, granting, withholding, and suspending infirmity and old age pensions as well as of giving final decisions as to applications for the refunding of contributions, instead of merely giving their opinion thereon. In decisions of this kind the pension office is not bound to follow the instructions of the directorate. The pension office is, however, bound to take a decision on the withdrawal of the pension and the suspension of payments of pension when directed to do so by the directorate.

The powers, granted to the directorate of the Insurance Institution by Sec. 64, par. 5, are in this case granted to the pension office. Otherwise the course of procedure will be settled by the proper public central authorities, at the place where the Insurance Institution is situated, by joint Insurance Institutions, but, in default of agreement among the Governments concerned, by the Imperial Chancellor.

6. *General Regulations.*

Sec. 87.—The number of the representatives of the employers and of the insured in the boards of the Insurance Institution must be equal.

Sec. 88.—Only male Germans, being of full age and resident in the district of the Insurance Institution, are eligible for election as representatives of the employers and of the insured. Ineligible for election are those persons who are unqualified for the office of a "Schöffe."*

Eligible for election as representatives of the employers are: only the employers of persons insured in accordance with this Law, and the recognised heads of works; as representatives of the insured those persons who are insured under this Law are eligible for election.

Sec. 89.—Those insured persons (Secs. 1, 2, 14) who employ people liable to insurance for permanent work are reckoned in the formation of the boards of the Insurance Institution as employers.

Sec. 90.—The election of the representatives of the employers and of the insured is for five years. The persons elected remain, after the expiration of this time, in office till their successors have taken up their duties. The outgoing representatives are eligible for re-election.

* "Schöffe," a non-judicial person summoned almost in the same way as a juryman to be a member of a judicial court for judging light offences.—Note by Translator.

Persons who, without good grounds (Sec. 94) decline to be elected, and who unless for good reasons do not appear at the proper time at the sittings, or who in other ways avoid their duties, can be fined by the chairman of the directorate up to 500 marks (25*l.*), and, if they are the "Beisitzer" of the pension offices, by the chairman of the pension office up to 150 marks (7*l.* 10*s.*).

If an election is not effected or if the elected persons refuse to serve, the proper lower administrative authorities at the place where the board is situated can appoint the representatives from the number of the employers and from that of the insured.

Sec. 91.—If, with regard to a person elected, facts become known which deprive him of his eligibility to election in accordance with this Law, or which are considered as gross violations of the official duty, the person elected, after opportunity has been given him to explain matters, is to be removed from his office by a decision of the directorate. Appeal against such decision lies within a month to the Imperial Insurance Office. It does not prevent the decision being carried out pending such appeal.

Sec. 92. *Honorary Posts.*—The representatives of the employers and of the insured, belonging to the organs of the Insurance Institution, administer their office as honorary posts and receive (according to the detailed regulation of the code of rules) reimbursement for their actual expenses; the representatives of the insured receive, besides this, a lump sum for loss of time or compensation for the earnings from work that they have lost. The "Beisitzer" of the pension offices chosen from among the employers and residents in the place can, if they forego the compensation for the amount they are out of pocket, be allowed by the code of rules a lump sum for loss of time.

Sec. 93. *Responsibility of the Members of the Board.*—The members are answerable to the Insurance Institution for faithful administration of the business, like guardians towards their wards; and, if they act intentionally to the detriment of the Insurance Institution they are subject to the penal regulation of Sec. 266 of the Penal Code.

Sec. 94. *Refusal to accept Election.*—Election to the honorary offices can only be declined by the employers of the persons who are insured in accordance with this Law, and by authorised managers of works where such employers exist for the same reasons as those on which, in accordance with Sec. 1786, par. 1, figs. 2 to 4 and 8 of the Civil Code, the office of a guardian can be declined. The position of an honorary post conferred under the present Law, or under the Accident Insurance Law, or under the Sickness Insurance Law, is identical with the position held by a guardian. Other grounds of refusal can be added by the Code of Rules (Sec. 70).

Re-election can be refused during one tenure of office.

Sec. 95.—So long as the directorate or committee is not yet constituted, or so long as these boards refuse to fulfil their legal or statutory obligations, the chairman of the directorate has to

carry out the latter at the cost of the Insurance Institution, or to have them carried out by agents.

Sec. 96. *On Voting.*—In case of an equality of votes in a division taken by the boards, the chairman has the casting vote.

Sec. 97. *Unhindered Discharge of Functions.*—The representatives of the insured have in every case, in which they are called upon to carry out their duties, to inform their employers of the same. The non-performance of their work, during the time in which the specified persons are prevented (by carrying out those duties) from working, does not entitle the employers to cancel the work contract before the expiration of time laid down in it.

Sec. 98. *Official Personnel.*—The rights and duties of State or Communal officials, in accordance with the detailed regulations of the office, chancery, and lower officials employed in the chief office by the Insurance Institution and its boards, in so far as they are not considered—in accordance with the Common Law applying to them—as State or Communal officials.

Sec. 99. *Re-insurance Associations.*—Several Insurance Institutions can unite to bear jointly the burdens of the infirmity insurance wholly or partially.

7. *Alterations.*

Sec. 100.—Alterations of the districts of the Insurance Institutions are permissible in so far as they are proposed by the committee of an Insurance Institution concerned or by the Government of a Confederated State, whose territory the Insurance Institution wholly or partially embraces, and are sanctioned by the Federal Council. Before such sanction is decided, the committees of the Insurance Institutions concerned as well as the Governments of those Confederated States, whose territories are concerned in the alteration, are asked for their views. In the case of Insurance Institutions for the districts of wider Communal Unions, the representatives of the latter are also entitled to bring forward motions for alterations; before alterations of the districts of such Insurance Institutions are sanctioned, the representatives of the Communal Union concerned must be heard.

An amalgamation, division, or dissolution of existing Insurance Institutions requires the consent of the Reichstag.

The alteration of the district of an Insurance Institution, which is only the consequence of an alteration of the administrative district for which the Insurance Institution was established, does not come under the foregoing regulations.

Sec. 101.—If local districts separate from the district of an Insurance Institution, the accumulated capital to its full extent as well as all the obligations which have arisen up to that time, remain with the latter until the moment of separation.

If the alteration leads to the dissolution of the Insurance Institution, its capital with all rights and duties (in so far as the same is not transferred by the Governments concerned to those Insurance Institutions to which the districts of the dissolved

institutions are assigned, or is taken over with the sanction of the Governments concerned by an Insurance Institution), goes to the wider Communal Union or respectively to the Confederated State; in the case of joint Insurance Institutions, proportionately to the Communal Unions or to the Confederated States, for which the Insurance Institution was established.

The extent to which, by dissolution of a joint Insurance Institution, the Communal Unions or Confederated States are to participate in the transfer of the capital, is decided, in default of agreement, by the Federal Council; or when only Communal Unions of one Confederated State are concerned, by the public central authority.

Sec. 102.—Disputes arising between the Insurance Institutions concerned, with regard to the settlement of the capital, are, in default of an understanding or of a decision of a Court of Arbitration, to be settled by the Imperial Insurance Office.

(C.) *Courts of Arbitration.*

Sec. 103.—At least one Court of Arbitration will be established for the district of each Insurance Institution. The number, the districts, and the seats of the Courts of Arbitration will be fixed by the central authorities of the Confederated State in the territory in which the Insurance Institution has its seat. For joint Insurance Institutions this will be fixed, in default of agreement among the Governments concerned, by the Imperial Chancellor.

Sec. 104.—Each Court of Arbitration consists of one permanent chairman and of a "Beisitzer."

The chairman is named from the number of the public officials of the central authorities of the Confederated State in which the Court of Arbitration is situated. At least one substitute for the chairman is to be appointed in the same way.

The "Beisitzer," to the number fixed by the code of rules, will be elected by a simple majority of votes by the committee of the Insurance Institution and in equal proportions in separate poll by the employers and the insured.

The assistant officials of the Court of Arbitration are officials of the Insurance Institution; they are appointed by the directorate of the Insurance Institution after hearing the views of the chairman of the Court of Arbitration.

The regulations in Sec. 62, par. 3; Sec. 64, par. 5; Sec. 83, pars. 1, 3; Secs. 87 to 92, sentence 1; Secs. 94, 97, 98, are correspondingly applicable under the following conditions:—

(1) The members of the Court of Arbitration may not be members of the directorate. They may not represent the employers or the insured under a lower administrative authority nor a "Beisitzer" in a pension office.

(2) The dismissal of an elected "Beisitzer" is effected by the chairman of the Court of Arbitration, under reservation of appeal to the higher administrative authority.

(3) The imposition of costs, in accordance with Sec. 64, par. 5, is effected by the chairman of the Court of Arbitration.

Sec. 105.—The name and residence of the chairman and of his substitutes are to be published officially in the district of the Court of Arbitration by the public central authorities, and are to be communicated to the Imperial Insurance Office.

Sec. 106. The chairman convenes the Court of Arbitration and conducts the proceedings of the same.

The Court of Arbitration is authorised to take the depositions of witnesses and experts and to have their evidence confirmed by oath.

The Court of Arbitration when arriving at decisions must be composed of five members, among whom must be two employers and two insured persons.

The decisions of the Court of Arbitration are arrived at by a majority of votes and are to be handed to the parties at latest within three weeks of their delivery.

The calling in of "Beisitzer" follows usually in the order set forth in advance. The regulation of Sec. 83, par. 2, is applicable. If the chairman for special reasons wishes to deviate from the order, his grounds for the change are to be noted in the official documents.

For the rest, the course of procedure before the Court of Arbitration is regulated by Imperial Order with the consent of the Federal Council.

Sec. 107.—The costs of the Court of Arbitration, including the remuneration of the "Beisitzer" and of the assistant officials as well as the costs of the proceedings before the same, are borne by the Insurance Institution.

Remuneration may not be granted to the chairman of the Court of Arbitration nor to his deputies by the Insurance Institution.

Resolutions will be arrived at with regard to providing the business premises and business necessaries of the Court of Arbitration by the chairman, in agreement with the directorate of the Insurance Institution. In case of difference of opinion the public central authorities of the Confederated State in which the seat of the Court of Arbitration is decide.

(D.) *Imperial Insurance Office and State Insurance Offices.*

Sec. 108. *Imperial Insurance Office.*—The Insurance Institutions are under the control of the Imperial Insurance Office. The right of control of the latter extends over the observance of the legal and statutory prescriptions.

All decisions of the Imperial Insurance Office are final, in so far as it is not otherwise determined by this Law.

The Imperial Insurance Office is authorised, at any time, to undertake a revision of the affairs of the Insurance Institutions. The members of the directorates and other boards of the Insurance Institutions are bound, at the request of the Imperial Insurance Office, to produce their books, vouchers, securities, and cash in hand, as also the documents referring to the contents of the books

and the fixing of pensions, &c., and to furnish any other information which is considered requisite for carrying out the power of control. The Imperial Insurance Office can compel them to do this, and also to observe the legal and statutory prescriptions by fines up to 1,000 marks (50*l.*).

Sec. 109.—The Imperial Insurance Office decides, without prejudice to the rights of third parties, disputes relating to the rights and duties of the boards of the Insurance Institutions as well as to the members of these boards, to the interpretation of the codes of rules and to the validity of completed elections, in so far as the latter do not come under Sec. 63, par. 3; Sec. 77, par. 3; and Sec. 82, par. 2.

This prescription does not apply to the conditions of service of officials appointed on the basis of Sec. 74, par. 1, and specified in Sec. 81, par. 2.

Sec. 110.—The decisions of the Imperial Insurance Office are arrived at when there are present at least four members, including the chairman, among whom must be one representative of each of the employers and of the insured, and with the collaboration of a judicial official, when the question is:—

(1) About the decision on appeal against resolutions of boards of the Insurance Institutions (Sec. 75).

(2) About the decision of disputes relating to proprietary rights when alterations of the balances in the hands of the Insurance Institutions (Sec. 102) are made.

(3) About claims for compensation against associations of special trades or callings ("Berufsgenossenschaften") (Sec. 23, par. 3; Secs. 113, 128, par. 3).

(4) About the decision on appeal against the decisions of the Courts of Arbitration (Sec. 116).

Resolutions by which appeals are sent back without oral proceedings (Sec. 117, par. 2) are arrived at when three members are present, among whom must be one representing the employers and one the insured.

The representatives of the manufacturers and of the workmen who, without restriction to the affairs of their special calling, are elected on the basis of the Accident Insurance Laws as non-permanent members of the Imperial Insurance Office, are also considered to be representatives of the employers and the insured for the purposes of this Law.

The dismissal of a representative of the employers or of the insured (Sec. 91) is effected by the Imperial Insurance Office.

For the rest, the forms of the procedure and of the routine of business of the Imperial Insurance Office are regulated by Imperial Order with the consent of the Federal Council.

Sec. 111. *State Insurance Offices.*—In so far as a State Insurance Office is established for the territory of a Confederated State, those Insurance Institutions which do not extend beyond the territory of this Confederated State are under the control of the State Insurance Office. The prescriptions of Secs. 108 to 110 are correspondingly applicable to the State Insurance Offices.

In the affairs of the Insurance Institutions, placed under the State Insurance Offices, the authority assigned to the Imperial Insurance Office in Secs. 72, 91, 102, 140, 156, 161, and 178, passes to the State Insurance Office; and in so far also as the "Berufsgenossenschaft" is concerned, is under the control of the same State Insurance Office, the power assigned to the Imperial Insurance Office in Sec. 23, par. 3; Sec. 113, par. 6, and Sec. 128, par. 3, is also transferred to the State Insurance Office.

The forms of the course of procedure and of the routine of business in the State Insurance Office are regulated by the Government of the State.

III. *Course of Procedure.*

Sec. 112. *Fixing the Amount of the Pensions.*—The claim for the awarding of a pension is to be notified to the proper lower administrative authorities, or pension office, for the place of residence or for the place of employment of the insured; and, if he no longer has in the country of his last place of residence or place of employment, the documents on which it is based (especially the last receipt card), Sec. 131 must be handed in at the same time. The public central authorities may order that the notification is to be carried out with legal effect by another authority; the latter has to pass on the notification to the proper lower administrative authorities or pension office for its district.

The lower administrative authorities or pension office has to set on foot the enquiries necessary for showing clearly the circumstances of the case, and to forward the case, with the expression of their professional opinion (Secs. 57 to 59, 79 and 84, par. 1) to the directorates of the proper Insurance Institution for their district.

If the directorate believes that it is unable to comply with the recommendation of the lower administrative authority or of the pension office for the awarding of a pension, the affair, in so far as it is a question of obligatory insurance (Secs. 1 to 7), or of the right of insurance (Sec. 14), or of estimating the capacity to earn a livelihood of the applicant for a pension (Secs. 5, 15, 16) is to be returned to the lower administrative authorities or to the pension office for opinion of the "Beisitzer" (Sec. 59, par. 1) in case the latter have not been consulted.

If the notified claim is recognised, the amount and the date of the pension are at once to be fixed. A written notification has then to be sent to the person entitled to receive the pension, from which the manner of calculating the same is to be evident.

If the notified claim is not recognised, it must be refused in writing, giving the grounds for the refusal.

Sec. 113.—The assumption that the incapacity to earn a livelihood has been caused by an accident, to be compensated in accordance with the Accident Insurance Law, is not a ground for the refusal of the claim to infirmity pension. In so far as the other conditions are present, under which an infirmity pension

may be awarded, it is still more desirable that this pension should be fixed.

If, then, the infirmity pension is paid for a period, for which the recipient has a claim to accident insurance, this claim is transferred to the Insurance Institution, in so far as the infirmity pension awarded does not exceed the accident pension to be awarded.

The Insurance Institutions are entitled, on behalf of the injured person, to request the fixing of the accident pension, in so far as this has not yet taken place, and, in case of necessity, to carry out the proceedings prescribed by the Accident Insurance Law. They are also entitled, on behalf of the injured person, to go to law, and that without consideration of the final dates (periods) which have lapsed through no fault of theirs.

The Insurance Institutions are also then entitled, in accordance with div. 3, to bring about the fixing of accident pensions, when, as a consequence thereof, cessation of the infirmity or old age pensions would wholly or partially ensue.

If in the cases of par. 1 a cure had been initiated by the Insurance Institution, the regulations of Sec. 21 are correspondingly applicable.

Disputes arising out of the claim for compensation (pars. 2 and 5) will be decided by the Imperial Insurance Office.

Sec. 114.—The applicant can demand a decision of the Court of Arbitration as regards the notification by which his claim to infirmity or old age pension is refused, as also as regards the notification by which the amount and the date of the commencement of the pension are fixed. The appeal has no delaying effect.

For deciding as to the appeal, that Court of Arbitration is convened which is competent for the district of the lower administrative authority or of the pension office. The appeal must, to avoid exclusion, be lodged with this Court of Arbitration within one month after the receipt of the notification.

Compliance with this term is also considered to have taken place, when, within that period, the appeal of the applicant for pension has been handed in to another authority; the latter has immediately to hand over the appeal papers to the proper Court of Arbitration.

The notification must specify the term within which the appeal will lie, and the proper Court of Arbitration for such appeal.

The decision of the Court of Arbitration must be drawn up and handed to the applicant for pension, as well as to the directorate of the Insurance Institution.

Sec. 115.—The Court of Arbitration has, when it considers the claim to pension to be justified, immediately to fix the amount and the date of the pension. If the Court of Arbitration, in special exceptional cases which the Imperial Insurance Office may specify more closely, has recognised the claim to a pension only in principle, and has not immediately decided on the amount and the

date of the commencement of the pension, the directorate of the Insurance Institution has in those cases, in which the legal remedy for appeal is lodged, immediately to award temporary pension amounts. There is no legal remedy against the temporary awarding of pension amounts. As soon as the claim to pension is legally established, the directorate has to fix the amount and the date of the commencement of the same (Sec. 112), in so far as this has not already been done. The amounts paid temporarily will be reckoned in with the pension finally assigned.

Sec. 116.—Both parties have legal remedy in an appeal against the decision of the Court of Arbitration. The appeal of the directorate has delaying effect, in so far as it is a question of sums to be paid supplementarily, for the time before the issue of the decision appealed against. Otherwise the appeal does not delay the effect of the decision.

The Imperial Insurance Office decides as to the appeal. The legal remedy is to be lodged with it, to avoid exclusion, within one month after the handing in of the decision of the Court of Arbitration; the regulation of Sec. 114, par. 3, is correspondingly applicable.

The appeal can only be based on the following grounds:—

(1) That the decision appealed against rests on the non-application or the wrongful application of the existing law or is clearly against the evidence of the official documents.

(2) That the proceedings themselves are essentially defective.

Sec. 117.—When the appeal is lodged it must be stated in what there is considered to be a non-application or wrongful application of the existing Law, or an offence against the clear evidence of the official documents, an alleged defect in the procedure. The Imperial Insurance Office is not bound down in its decision merely to those grounds which have been urged in vindication of the applications handed in.

If the declaration of such grounds is wanting, or, if the examination of the application shows that the contested decision does not rest on the non-application or wrongful application of the existing Law nor on a defective procedure, and when there is no offence against the clear evidence of the documents, or proof that the appeal has been lodged too late, then the Imperial Insurance Office can send back the appeal without oral proceedings. Otherwise, the Imperial Insurance Office has to decide after oral proceedings.

If the contested judgment is quashed, the Imperial Insurance Office can at once itself decide in the matter to refer it to the Court of Arbitration or to the directorate. The Imperial Insurance Office can, at the same time, determine that a certain amount of pension is to be paid temporarily to the applicant for the pension. In cases of rejection, the legal judgment on which the Imperial Insurance Office founds the rejection is to form the basis of further decisions or notifications.

Sec. 118.—The Insurance Institutions are authorised to waive the repayment of pension amounts paid, in accordance with Secs. 115 to 117, before the legal decision.

Sec. 119.—The prescriptions of the regulations, for civil suits for the revival of the proceedings, are correspondingly applicable to the contesting of the legal decision on a claim for pension, in so far as is not otherwise determined by Imperial regulations after approval of the Federal Council.

Sec. 120.—The repetition of an application for the awarding of an infirmity pension which has been finally refused on account of the absence of permanent incapacity to earn a livelehood, is then only permissible before the expiration of one year from the date of the handing in of the final decision, and when it is authenticated testimony that in the meantime circumstances have arisen from which the permanent incapacity of the applicant to earn a livelihood is apparent. When such attestation is not produced the lower administrative authorities or pension office have to reject the prematurely repeated application by an enactment, against which there is no legal remedy.

Sec. 121.—The directorate issues a written statement of its reasons on withdrawing a pension (Sec. 47) as well as on suspending a pension payment (Sec. 48). Before such decision is taken the opinion of the proper lower administrative authorities or of the pension office is to be heard for the place in which the pension recipient resides (Secs. 57 to 59, 79, 84, par. 1).

In other cases Sec. 112, par. 3, and Sections 114, 116 to 119 are correspondingly applicable.

Sec. 122.—The lower administrative authorities or the pension office are to be informed by the directorate of all decisions arrived at by them. In so far as the pension offices have been established, the directorate has further to inform the proper lower administrative authorities for the place where the pension recipient resides as to the proper amount to be drawn. The same holds good when alterations are begun to be made.

Sec. 123. *Payments of Pensions.*—The payment of the pensions will be effected by the instructions of the directorate of proper Insurance Institution under the provisions of Sec. 112, par. 2, by way of advance by the postal administration, and usually by the next post office in that district in which the entitled recipient had his place of residence at the time the application for the awarding of the pension was presented. The directorate of the Insurance institution has to mention to the person entitled to a pension the post office charged with the payment of the pension.

If the entitled recipient changes his place of residence, the directorate of the Insurance Institution which has assigned the pension has, at his request, to transfer the payment of the latter to the post office of the new place of residence.

The central postal authorities are entitled to draw advances of funds from every Insurance Institution. The same is to be given to the money offices, specified to the Insurance Institutions by the central postal authority in quarterly or monthly instalments and may not exceed the amounts expected to be paid in for the Insurance Institution in the current fiscal year.

Sec. 124. *Office of Accounts* (*Rechnungsstelle*).—The office of

accounts of the Imperial Insurance Office has to carry out all the account-keeping and technical insurance work arising out of this Law. It is specially charged with—

(1) The apportionment of the pensions (Secs. 125, 174).

(2) The settlement of accounts with the postal authorities (Secs. 126 et seq.) and the computation of the funds to be advanced to the latter by each Insurance Institution (Sec. 123).

(3) Co-operating in the statistical work required in order to comply with the Law.

(4) Co-operating in fixing the insurance contributions (Sec. 32).

The Imperial Insurance Office determines what information is to be given to the account office for these purposes by the Insurance Institutions.

Sec. 125. *Apportionment of the Pensions.*—The account office apportions the pensions to the Empire, to the joint capital, and to the special capital. The Empire is to be charged with a grant of 50 marks (50*s.*) (Sec. 35) for each pension and for every contributory week without payment of contributions coming into account and of a share of the pension amounting to 18 pf. (about 2½d.) until otherwise fixed by the Federal Council (Sec. 40, par. 2).

The graduating scales of the infirmity pensions, as well as a quarter of the old age pensions, are to be borne by the special capital of the separate Insurance Institutions; and all other portions of the pensions by the joint capital. The graduated amounts are chargeable to the institution into which the corresponding contributions have been paid; the quarter of each old age pension is to be apportioned to those institutions which have received the contributions for the pensions recipient concerned and in proportion to the amount of these contributions. The portions of the pensions falling to the charge of the special capital of another Insurance Institution, are to be refunded to the Insurance Institution assigning them at the end of the fiscal year at their capital value in one sum (Sec. 126).

For the fixing of the proportion in which the pension amounts, paid in the last fiscal year, are to be refunded to the Post, the office of accounts ascertains for each year and for each Insurance Institution the capital value of the current pensions assigned by it and the portion thereof falling to the Empire, to the joint capital and to the special capital of the separate Insurance Institutions. The Federal Council decides as to the manner of calculating the capital value.

Sec. 126.—The central postal authorities have to deliver to the office of accounts proofs of the payments made in the previous fiscal year under the instructions of the Insurance Institutions. The office of accounts has to apportion the amounts advanced in the proportion fixed by Sec. 125, par. 3, to the Empire, to the joint capital and to the special capital. The payments thus accruing to the joint capital of all the institutions are to be refunded by the separate Insurance Institutions in proportion to that part of their capital destined for the common burden.

On the basis of this apportionment, the account office has to inform each Insurance Institution of the amount which it has to refund, on the one hand, out of the portion of its capital destined for the common burden, and, on the other hand, out of its special capital; at the same time the capital values are to be fixed which have to be refunded in accordance with Sec. 125, par. 2, by the separate Insurance Institutions to each other during the previous fiscal year. The figures on which the calculations are based are to be stated. Complaint can be made to the Imperial Insurance Office against the apportionment and the calculation. The amounts, chargeable to the Empire, are to be laid before the Imperial Chancellor (at the Imperial Office for the Interior).

The office of accounts has to inform the central postal authorities what amounts have to be refunded by the Empire and by the separate Insurance Institutions.

Sec. 127. *Reimbursement of the Advance made by the Postal Administration.*—The Insurance Institutions have to refund to the postal administrations the amounts of which they have been informed by the office of accounts (Sec. 126) within two weeks after the information has been sent in. The reimbursement is made out of the cash funds of the institution. If such do not exist, the wider Communal Union or the Confederated State respectively has to advance the necessary amounts. In the case of joint Insurance Institutions, this advance has to be provided in the proportion fixed by Sec. 68, par. 2.

At the request of the central postal authorities, the Imperial Insurance Office is to institute proceedings for compulsory recovery against Insurance Institutions which are in arrears in refunding the amounts.

Sec. 128. *Reimbursement of Contributions.*—The claim to the reimbursement of contributions (Secs. 42 to 44) is to be brought, accompanied by the documentary proofs on which it is based, before the lower administrative authorities or the office of accounts of the place of residence, or of the last place of employment of the contributors, or before the authority determined by the public central authorities (Sec. 112, par. 1).

The lower administrative authorities or office of accounts has to forward the documents to the directorate of the proper Insurance Institutions for its district. The latter has to give a written judgment on the claim.

Sec. 113 finds corresponding application when the death, which forms the basis of the claim to reimbursement of contributions, has been caused by an accident to be compensated under the Accident Insurance Laws.

The person entitled to such reimbursement has the right to complain against the judgment to the Imperial Insurance Office. This complaint has to be lodged at the Imperial Insurance Office, in order to avoid rejection, within one month of the handing in of the judgment.

The regulations of Sec. 114, par. 3, are to be correspondingly applied in cases of pars. 1 and 4.

The Insurance Institutions, to which at the time the now reimbursed contributions were paid, have to indemnify the reimbursing Insurance Institution; amounts expended in making a round sum (Sec. 42, par. 1, Sec. 43, Sec. 44, par. 3) remain to the charge of the reimbursing Insurance Institution. The course of procedure will be regulated by the Imperial Insurance Office.

Sec. 129. *Decision by the Pension Offices.*—If, on the basis of the prescriptions of Sec. 86, the rights therein specified are transferred to pension offices, the prescriptions of Secs. 112 to 122, 128, are correspondingly applicable to them with the following restrictions:—

The decisions of the pension office are arrived at by a majority of votes, when three members are present, among whom there must be, besides the chairman or his substitute, one representative each for the employers and for the insured, and when, in the opinion of the chairman, or his substitute, it is a question of the refusal of application for pension, or of the awarding of a pension to a smaller amount than that applied for, or of the withholding of an infirmity pension.

In the cases in which the claim to a pension or to a reimbursement of contributions has been wholly or partially recognised, or when the withholding of an infirmity pension, or the suspension of payments of pensions, has been refused or agreed upon, the chairman of the pension office has, after the judgment has been awarded, immediately to forward the documents to the directorate of the proper Insurance Institution for the district of the pension office, at the same time specifying those decisions which have been arrived at in opposition to its vote.

The directorate of the Insurance Institution is authorised to contest, in accordance with Sec. 114, par. 1, and Sec. 128, par. 4, by appeal, or by complaint, the decisions of the pension office by which the claim to a pension or to a reimbursement of contributions has been wholly or partially recognised, or by which the withholding of invalid pensions or the suspension of the payment of pensions has been refused. The appeal and complaint of the directorate have a delaying effect, the appeal, however, only in so far as it concerns amounts which are to be paid supplementarily for the time before the decision of the pension office was issued.

The appeal or complaint is to be lodged with the proper Court of Arbitration, or with the Imperial Insurance Office, to avoid rejection, within one month after the documents concerning the case have been handed in to the directorate (par. 3) by the pension office.

Sec. 130. *Stamps.*—For the purpose of collecting the contributions, stamps, with the designation of their money value, will be issued by each Insurance Institution for the separate wages-classes. The Imperial Insurance Office determines the period of time for which the stamps are to be issued, as well as the distinguishing features of the stamps, and the time for which they are valid. Stamps which have become invalid may, within two years after

the expiration of the time for which they are valid, be exchanged for valid stamps by the offices appointed for the sale of stamps.

The stamps of an Insurance Institution can be purchased at all post offices situated in its district, and at other places of sale to be established by the Insurance Institution, on payment of the nominal value of the stamps.

Sec. 131. *Receipt Cards.*—The contributions are paid by sticking a corresponding sum in stamps on the receipt card of the insured person.

The insured person is bound to have the receipt card made out, and to produce it for the purpose of sticking on the stamps, or of cancelling the stamps at the time provided therefor (Secs. 141, 149, 150).

He can be compelled to do this by the local police authorities, or by the chairman of the pension office, in so far as the control over the payment of contributions (Secs. 161 et seq.) has been transferred to the latter, and by fine up to 10 marks (about 10*s*.). If the insured person is not provided with a receipt card, or if he refuses to produce it, the employer has the right to procure one at the cost of the insured person, and to keep back the proper sum at the next payment of wages.

The insured person is entitled to demand the making out of a new receipt card at his own cost, and at any time on returning the old one.

Sec. 132.—The receipt card contains the year and the day of its issue, the regulations issued (Sec. 139) as to the employment, and the punishment prescribed by Sec. 184. In other respects the Federal Council determines its arrangement. The employment of special receipt cards can be prescribed by the Federal Council for self-insurance and its continuance (Sec. 14, par. 1), and the unauthorised employment of other receipt cards can be threatened with punishment by the Federal Council.

The costs of the receipt cards, in so far as they are not to be procured for the account of the insured person (Sec. 131, pars. 2 and 3), are borne by the Insurance Institution of the district of issue.

Sec. 133.—Each receipt card has space for the reception of stamps for at least 52 contributory weeks. The cards are to be provided with consecutive numbers for each insured person; on the first card made out for him is to be designated at the top the name of the Insurance Institution in the district, of which the insured person is at the time employed; on each subsequent one the name of the Insurance Institution which is noted on the card immediately preceding. If the name contained on a later card does not agree with the name contained on the first card, the name on the first card is considered to be the real one.

Sec. 134.—The making out and the exchange of receipt cards are conducted by the office specified by the public central authorities.

The proper office, thus indicated, has to reckon up the stamps stuck on the returned card in such a way that it is clearly seen how many contributory weeks for the separate wages-classes have

to be counted for the holder of the card. At the same time, the duration of the attested illnesses and military services of the holder has to be indicated which fall in the time for which the receipt card is valid. A certificate of the final figures resulting from this reckoning has to be given to the holder of the card.

Sec. 135.—A receipt card loses its validity if it is not handed in for exchange within two years after the day on which, according to the card, it was made out. If the assumption is correct that the insured person has neglected to effect such a change, at the right time and through no fault of his, the directorate of the Insurance Institution for the place of employment can, at the request of the insured person, recognise the continued validity of the card.

The Federal Council is authorised to order that the period of validity of the cards can be prolonged by stamping.

Sec. 136.—Receipt cards which have been lost, become unusable or have been destroyed, can be replaced by new ones. The contributions proved to have been paid on the old cards are to be transferred in authenticated form on to the new card.

Sec. 137.—The insured person is entitled within two weeks after delivery of the certificate (Sec. 134) or of the new receipt card (Sec. 136), to protest against the calculations on the card, against the contents of the certificates (Sec. 134) as also against the transfer (Sec. 136).

Complaint can be entered with the immediately superior official authority within a similar period against the rejection of the protest. This authority decides finally over this as well as over other complaints relating to the course of procedure.

Sec. 138.—The receipt cards given up are to be sent to the Insurance Institution of the district; and they are then to be forwarded to the Insurance Institution whose name they bear. The latter is authorised to transfer the contents of the receipt cards of the same insured person to collection cards ("Konten") and to preserve these instead of the separate documents, which are to be destroyed. The procedure as well as the arrangement of the collection cards is determined by the Federal Council.

The Federal Council has to determine the prescriptions and the forms under which receipt cards are also in other cases to be destroyed.

Sec. 139.—The recording of a judgment on the conduct or doings of the holder or other entries or remarks other than those provided by this Law in or on the receipt cards are inadmissible. Receipt cards on which appear such entries or remarks are to be retained by any authorities into whose hands they come. The authorities have to cause the same to be replaced by new cards, on to which the contents which are allowed on the first card, in accordance with the regulations of Sec. 136, have to be transferred.

The employer or any third person is forbidden to retain the card against the will of the holder after the sticking-in of the

stamps. This regulation is not applicable to the retention of the cards on the part of the proper authorities and boards for the purpose of the exchange, the control, correction, calculation, transference or carrying out of the entry procedure (Secs. 148 et seq.).

Receipt cards retained in opposition to this prescription are to be taken from the offending party by the local police authorities and handed to the person entitled to hold them. The former are responsible to the latter for all detriment accruing to him from the contravention of this Law.

Sec. 140. *Payments of the Contributions by the Employers.*—The contributions of the employer and of the insured person are to be paid by the employer who has employed the insured person during the contributory week (Sec. 30). If the employment does not take place during the whole contributory week with the same employer the full weekly contribution has to be paid by the employer who first employed the insured person. Should this obligation not be satisfied and if the insured person has not himself paid the contribution (Sec. 114), the employer who subsequently employed the insured person has to pay the weekly contribution; he can, however, claim compensation from the first employer. If the insured person is at the same time in several works or service conditions, entailing insurance obligations, the employers are responsible as joint debtors for the full weekly contributions.

In so far as the actual time devoted to work cannot be ascertained, the contribution has to be paid for the work time which is considered approximately necessary to accomplish the work. In case of dispute the lower administrative authorities, at the request of one of the parties, give a final decision. The Insurance Institution has the right to issue special regulations for the calculation of such contributions. The sanction of the Imperial Insurance Office is required for the same.

Sec. 141.—The payment of the contributions proceeds so that the employer (Sec. 140) when paying the wages sticks stamps for the period of employment in the proper receipt card which is issued by the competent Insurance Institution for the place of employment for the wages-class applying to the insured person (Sec. 34). The employer has to procure the stamps out of his own means.

The Insurance Institution can determine how far employers are authorised to produce the stamps at other times than when the wages are paid. In all cases the stamps, devolving on the period of the work or service conditions, must be stuck in at latest in the last week of the calendar year, or in so far as the work or service conditions are concluded earlier, at the conclusion of the same.

Stamps for a period exceeding two weeks must be defaced. The Federal Council has to issue the further regulations as to the manner of defacement, and to specify the punishment incurred by their non-observance.

The Federal Council is authorised to issue regulations as to the

defacing of other stamps and to specify the punishment by their non-observance.

Sec. 142.—The insured persons are bound to allow to be kept back from them at the time of the payment of wages the half of the amount of their contributions; in cases of Sec. 34, par. 4, however, in so far as the insurance in a higher class has not been agreed upon by the employer and the insured person, the higher amount devolving on the insured is to be kept back. The employers can only thus collect the amount devolving on the insured.

The deductions for contributions are to be equally apportioned amongst the periods of payment of wages to which they belong. The equal amounts may be rounded off to full 10 pf. (about 1*d*.) without extra burden being thereby imposed on the insured.

If the deductions are omitted at one time of payment of wages, they may be completed for the period for which the wages are paid only on the next occasion when wages are paid. This regulation does not apply when, on account of a late settlement as to questions of doubtful obligatory insurance or for other reasons, contributions are subsequently handed in, without any blame attaching to the employer.

Employers whose insolvency has been established by a procedure for compulsory recovery of debts may, in so far as the payment of the contributions proceeds in the way notified in Sec. 141, par 1, make deductions from wages only for the period for which they can prove that the contributions due have already been paid; in so far, on the other hand, as the contributions are collected in accordance with Sec. 148, they are bound to make the deductions from wages allowed by par. 1, and to deliver their amount immediately after the deduction, to the proper collecting office. An order issued against the employer on the basis of Sec. 52A of the Sickness Insurance Law, also extends to the contributions to be collected by the sick fund institution concerned for the Infirmity Insurance Office.

Sec. 143.—The collection of contributions for those persons to whom the obligation to insure according to Sec. 2, extends will be regulated by decision of the Federal Council.

Sec. 144.—Payment of the contributions by the insured. Persons liable to insurance are bound to pay the contributions in place of the employers.

The insured person who, on the basis of this regulation, has paid the full weekly contributions has the right to claim from the employer (bound, according to Sec. 140, to pay the contributions) the reimbursement of half the amount; and in cases of Sec. 34, par. 4, and in so far as the insurance in a higher wages-class does not rest on an agreement between the employer and the insured person, the reimbursement of half the smaller amount, which the employer has to bear according to the wages-class, is the correct amount to be claimed for the insured person. The claim exists, however, only in so far as the stamps have been defaced in accordance with the regulations. The claim is to be brought forward for the wages-payment period concerned when those wages

are paid. If it is omitted on one pay-day, the claim for the period concerned can only be raised at the next following pay-day, in so far as the insured person, from no fault of his own, has not subsequently paid the contributions instead of his employer.

Sec. 145.—In cases of voluntary insurance (Sec. 14), the persons entering into it have to employ the stamps of the Insurance Institution in whose district they are employed or, in case there is no employment, at the place where they live. At the same time they are allowed to choose the wages-class. If insured persons go abroad, they are entitled to continue the insurance there; they have thereby to employ the stamps of that Insurance Institution in whose district they were last employed, or lived.

Persons who insure themselves voluntarily (Sec. 14, par 1) during an employment undertaken for wages or salary, and for which they have not been liable according to Sec. 3, par. 2, Sec. 4, par. 1, to the obligatory insurance, have the right to claim, from those employers who, if the insurance obligation existed, would be bound by Sec. 140 to pay the contributions, the half of the contributions paid in accordance with Sec. 144, par. 2, for the duration of the time of the work. The employer can in such cases decline higher amounts being reckoned in than would result from the application of Sec. 34, pars. 1 to 3.

Sec. 146. *Contributions that are not admissible.*—The subsequent payment of contributions, for an employment entailing obligatory insurance is inadmissible after the expiration of two years; in so far, however, as the payment of contributions is omitted on account of a tardy settlement of a disputed obligatory insurance or for other reasons occurring through no fault of the parties concerned, they are inadmissible after the expiration of four years from the date on which they become due. Voluntary contributions of a higher wages-class than the proper one (Sec. 34, par. 4) may not be paid for more than one completed year nor subsequent to the commencement of the incapacity to earn a livelihood (Secs. 15 and 16) nor for the further time during which the incapacity to earn a livelihood lasts.

Sec. 147.—The fact that stamps are found duly attached in a properly made out receipt card establishes the assumption that, during that number of contributory weeks for which stamps have been produced, a state of insurance corresponding to the prescriptions of the Law has existed either in consequence of obligatory or of voluntary insurance. This assumption does not, however, obtain when it is proved that the stamps have been stuck in after the expiration of a month from the day on which the contributions were due, or that during a calendar year more stamps have been attached than there are contributory weeks in the same.

Sec. 148. *Collection of the Contribution.*—An order can be issued by the public central authorities or by the statutes of an Insurance Institution with their consent, by the statutory regulations of a wider Communal Union or of a parish with the sanction of the higher administrative authorities, which deviates from the prescriptions of Sec. 141, par. 1, directing that the contributions

for all persons liable to insurance or for certain classes of them can be collected for the account of the Insurance Institution by the following bodies:—

(1) By sick funds institutions conforming to the laws of the Empire or State, or by miners' benefit funds.

(2) By parish authorities or by other officials specified by the public central authorities or by local receiving offices to be designated by the Insurance Institution.

In the same way regulations may be made in these cases as to the obligation of the insured persons to notify their arrival in or departure from a place ("Anmeldung and Abmeldung").

When, in accordance with this provision, the collection of the contributions by local receiving offices of the Insurance Institutions has been ordered, the latter are bound to establish such offices at their own cost at the places specified by the higher administrative authorities.

The Insurance Institutions are bound to grant indemnification to be fixed by the public central authorities to the sick funds institutions, to the parish authorities and to other offices designated by the public central authorities charged with the collection of these contributions.

The collection of insurance contributions against sickness can, by determination of the public central authorities or of the higher administrative authorities with the consent of the sick fund institution, be transferred to the local receiving offices of the Insurance Institutions (par. 1, fig. 2). In these cases the sick funds institutions concerned are bound to contribute to the costs of the receiving offices. Detailed regulations on this subject are to be made after taking the opinion of the Insurance Institutions and sick funds institutions concerned by the higher administrative authorities.

The public central authorities can settle the authority to be exercised by the Insurance Institution over the receiving offices in so far as they are not established by the Insurance Institution itself, in order to ensure the due fulfilment of their task.

For voluntary insurance (Sec. 14) the manner of collection or the contributions cannot be prescribed.

Sec. 149.—The public central authorities and the offices, designated by them as competent, can issue further regulations as to the course of procedure of the receiving offices (Sec. 148) in collecting, applying and accounting for the contributions.

In so far as these regulations do not otherwise prescribe, the contributions will be collected from the employers and the stamps corresponding to the contributions collected will be stuck on the receipt cards of the insured persons by the receiving offices together with the contributions for the insurance against sickness at the time when they are due; in the case of such insured persons, however, for whom insurance contributions against sickness are not to be collected, they will be collected at the times fixed by the receipt offices. The regulations of Sec. 131, par. 2, are correspondingly applicable on this point.

Sec. 150.—If the collection of the contributions is ordered, the public central authorities or the directorate of the Insurance Institution may permit certain employers themselves to collect the contributions of the persons employed by them by the application of stamps in accordance with the prescriptions of Secs. 140, 141. The receiving office is to be informed of such permission.

Imperial, State, and Communal authorities can undertake the collection of the contributions, according to the regulations of Sec. 140, for the persons liable to insurance employed by them. In so far as this takes place information is to be given to the Insurance Institution and to the receiving office.

Sec. 151.—If the collection of the contributions is ordered, it can, in the same way, be determined that:—

(1) Receipt cards (Secs. 134, 136) have to be made out and exchanged by the offices charged according to Sec. 148, par. 1, with the collection of the contributions.

(2) For those insured persons whose employment is restricted by the nature of the same or beforehand by contract to a period of less than one week, half of the contributions devolving on the insured will be collected directly from the insured; the other half devolving on the employers, will, however, be paid by the wider Communal Union or by the parish, and recovered by them from the employers.

In these cases the Insurance Institution has to grant special indemnifications to the sick funds institutions, to the parish authorities, and to other offices specified by the public central authorities charged with the collection of the contributions, and their amounts are to be fixed by the public central authorities.

Sec. 152.—The measures, provided in Sec. 148, par. 1; Sec. 151, fig. 1, can also be adopted for the members of a sick fund institution (Sec. 166) by their code of rules for those insured persons who belong to a sick fund institution established for works carried on by the Empire or by the State, also by the superior official authorities of those works.

Sec. 153.—The insured person is entitled to deposit the receipt cards with the office collecting the contributions so long as he is insured in the district of this office. The public central authorities can, in agreement with the Insurance Institution, prescribe that such deposits must be obligatory. In this case the regulation of Sec. 131, par. 2, sentence 2, is applicable.

Sec. 154. *Rounding off of Sums.*—If fractions of Pfennige arise in the settlement between employers and insured, the share falling to the employer is to be made a round sum to a pfennig more, and the share falling to the insured person is to be decreased to a Pfennig less.

Sec. 155. *Disputes.*—Disputes between the boards of the Insurance Institutions on the one hand, and employers or persons specified in Sec. 14 on the other hand, or between employers and employés, on questions arising as to which Insurance Institution or in which wages-class contributions are to be paid, will, in so far as they are not evident from the course of procedure by which

the amount of the pension is fixed, be decided by the proper lower administrative authorities for the place of employment (Sec. 65); and where pension offices exist, by the chairman of the same. As a rule, opportunity is to be given to the Insurance Institution to express its opinion before a decision is taken. Complaint can be made against the decision by the interested parties and by the Insurance Institution, which has expressed its opinion on the case, within one month afterwards, to the higher administrative authorities which latter give a final decision. The competent authorities are bound to comply in such decisions with the principles laid down by the Imperial Insurance Office. Disputes on questions of fundamental importance are to be transferred for decision to the Imperial Insurance Office, if this is demanded by the Insurance Institution within the term allowed for complaint.

If a difference of opinion arises on the question as to which authorities are competent to decide, the competency will be determined by the higher administrative authorities or by the public central authorities in so far, however, as several Confederated States come into the question, and in default of agreement among their central authorities, it will be decided by the Imperial Chancellor.

Sec. 156.—Disputes among the boards of different Insurance Institutions as to which of them ought to receive the contributions for certain persons will be decided at the request of the directorate or of an interested Insurance Institution, by the Imperial Insurance Office.

Sec. 157.—In other cases disputes between employers and employés about the calculation and charging of contributions to be paid for the latter or to be reimbursed to them in the cases under Sec. 140, par. 2, and of Secs. 144, 145, as well as disputes on claims for compensation in the case of Sec. 140, par. 2, will be finally decided by the lower administratives authorities and, where pension offices exist, by the chairman (Sec. 155).

Sec. 158.—After final decision of these disputes the lower administrative authorities and, where pension offices exist, the chairman of the same, have officially to see that contributions short paid are to be provided by the subsequent employment of stamps. Excess payments at the request of the Insurance Institution are to be called in again, and after destruction of the stamps by which they are made on the receipt cards, and after the accounts have been rectified they are to be repaid to the employers and employés who have advanced the sums for the payment of the contributions.

If it is a question of irregular employment of the stamps of a wrong Insurance Institution, the stamps of the proper Insurance Institution, corresponding to the number of contributory weeks, are to be attached, and the stamps wrongly employed are to be destroyed.

The value of the destroyed stamps is to be recovered from the Insurance Institution which issued them, and is to be divided proportionally between the employers and employés concerned.

Instead of destroying the stamps, the receipt cards can, in cases where the lower administrative authorities think proper, be called in and new receipt cards can be made out to which the entries are transferred.

Sec. 159.—The costs of the procedure in disputes of the kind specified in Secs. 155 to 158, are borne by the Empire when incurred by the Imperial Insurance Office, and in so far as they are incurred by a pension office, by the Insurance Institution, and in other cases by the Confederated State.

The regulation of Sec. 64, par. 5, is correspondingly applicable.

Sec. 160.—The contributions paid are to be refunded to the parties concerned at their request, even when there has been no dispute, in accordance with Secs. 155, 156, when the obligation to insure or the right to voluntary insurance (Sec. 14) has been finally proved not to exist for the contributory weeks in question.

Sec. 161. *Control.*—The Insurance Institutions are bound regularly to see that the payments of the contributions are made at the proper time and to the full amount.

Employers are bound to give on demand information as to the number of persons employed by them, as to the wages and salaries paid, and as to the duration of the employment to the boards of the Insurance Institution and their agents as well as to the other controlling authorities or officials, and to lay before them, for inspection during working hours on the spot, the business books or lists from which these facts are taken. The insured are, likewise, bound to give information as to the place and duration of their employment. The employers and the insured are further bound to deliver, if demanded, to the specified boards, authorities, and officials, against a receipt, the receipt cards for the purpose of control and of making any necessary rectifications. They can be compelled to do this by the local police authorities by means of fines up to the amount of 150 marks (7*l.* 10*s.*) each.

The Insurance Institutions are authorised to issue regulations, with the sanction of the Imperial Insurance Office, for the purpose of this control. The Imperial Insurance Office can order the issue of such regulations, and, if the order is not complied with, they can issue them themselves.

The directorate of the Insurance Institution, or the chairman of the pension office, in so far as the control of contributions devolves on the latter, is authorised to see that employers and insured comply with these regulations in due time, and if not to inflict fines up to the amount of 150 marks (7*l.* 10*s.*) each.

Sec. 162.—The costs falling upon the Insurance Institutions, through this control, belong to the expenses of administration. When they consist of cash expenditure, they may be imposed by the directorate of the Insurance Institution, or by the chairman of the pension office, in so far as the control of contributions devolves on the latter, but on the employer if, by the non-fulfilment of the obligations properly devolving on him, he has been the cause of their being incurred. Complaint to the higher administrative authorities against the payment of these costs can be made

within two weeks after the decision given that the employer has to pay them; the decision of these authorities is final. The payment of costs takes place in the same way as parish dues are collected.

Sec. 163.—Rectifications of the receipt cards are made, in so far as the parties agree upon them, in the manner given in Sec. 125 by the controlling boards, by the authorities, by the officials, or by the offices collecting the contributions; in other cases they are made after a settlement of disputed points is reached, in accordance with Secs. 155 to 157.

Sec. 164. *Administration of the Capital.*—The balances of the Insurance Institutions must be invested in the manner specified by Secs. 1807 and 1808 of the Civil Code. If the Insurance Institution has its seat in a Federated State, for the territory of which certain securities have been declared suitable for the investment of funds held in trust for wards, its balances can also be invested in these securities. The public central authorities of the Confederated State, in whose territory the Insurance Institution has its seat, can also sanction the investment of the balances of the Insurance Institution in parish loans, and in loans for the wider Communal Unions. It can further be similarly ordered that, in investing the capital of the institution, certain interest-bearing stocks of the kinds permitted by the foregoing regulations may be acquired only to an amount to be specified more exactly and that regulations may be made as to the safe keeping of the securities. In the case of joint Insurance Institutions, the sanction of the Governments concerned is required for this arrangement. Moreover, in the same way it may be permitted (but subject to repeal) that cash balances, temporarily in hand, may be invested for a time otherwise than is laid down in Secs. 1807 and 1808 of the Civil Code.

The Insurance Institutions can, with the sanction of the supervising authorities, invest a portion of their capital in another way than is permitted by par. 1 and especially in landed property. If the Insurance Institutions wish to invest more than the fourth part of their capital in this way, they require the sanction of the Federal Council, besides that of the Communal Union or that of the central authorities of the Confederated State for which they are established; and when several public central authorities are concerned and when they cannot agree, the sanction of the Federal Council is also required.

Such an investment is, however, only permissible in securities either for the exigencies of the administrative authorities to avoid loss of capital for the Insurance Institution or for such organisations which exclusively or principally benefit that part of the population liable to insurance.

An Insurance Institution may not, however, invest more than half of its capital in the way specified above.

Sec. 165.—The Insurance Institutions are bound to deliver to the Imperial Insurance Office, in accordance with its detailed directions and within the space which it prescribes, summaries of the results of their business and of their accounts.

The manner and form that the book-keeping is to take in the Insurance Institutions will be regulated by the Imperial Insurance Office.

The financial year is the calendar year.

IV.—*Final, Penal, and Transitional Regulations.*

Sec. 166. *Sick Fund Institutions.*—As sick fund institutions within the meaning of this Law are included (if the regulations in Secs. 20, 62, par. 1, Sec. 82, par. 2, are complied with), sick fund institutions, factory, building, and guild sick funds, miners' benefit funds, as well as the parish sick insurance institution and organisations of a similar kind which have been established in accordance with the laws of the country.

Sec. 167. *Special Regulations for Seamen.*—Seamen (Law of June 13, 1887) are to be insured in that Insurance Institution in the district of which the home port of the ship is situated.

The contributions to be paid for seamen may, in accordance with special regulations of the Insurance Institution, be paid by the shipowners according to the estimated number of the crews of the single ships as required for the accident insurance of seamen. Regulations may be made by the Federal Council deviating from the prescriptions of this Law as to the course of procedure to be adopted for the payment of contributions.

For seamen living out of Europe a three months' term is allowed for applying for legal redress. This term can be further extended by the authorities, against whose decision the legal redress is sought.

The duties of the lower administrative authorities, in so far as seamen are concerned, can be transferred by the Federal Council to the sailors' institutes ("Seemannsamt").

Sec. 168. *Recovery of Debts.*—Arrears, as well as fines, accruing to the funds of the Insurance Institution, will be recovered in the same way as parish dues. Arrears have the preferential claim mentioned in Sec. 61, fig. 1, of the Bankruptcy Regulations issued on May 20, 1898; and are barred within two years of falling due.

Sec. 169. *Competent State Authorities.*—The central authorities of the Confederated States determined which unions are to be considered as wider Communal Unions; and they settle by what State or parish authorities, or by what representatives, their functions are to be carried out which, under this Law, have been allotted to the State and parish officials, as also to the representatives of the wider Communal Unions.

The regulations issued by the central authorities of the Confederated States, in conformity with the foregoing regulations, are to be published in the "Imperial Gazette."

Sec. 170. *Delivery of Notices.*—Notices which specify the dates when fixed terms expire ("Lauf von Fristen") may be delivered through the post by means of a registered letter. Certificates of delivery by post-office establish, after the expiration of two years

from their issue, the presumption that the notices were delivered within the proper time after their issue.

Persons who do not live in the country can be called upon by the authorities, who deliver the notices, to appoint an authorised person to whom the notice can be delivered. If such a person is not appointed within the time fixed, the delivery can be replaced by the public posting of the notice during a week at the business premises of the authority, who delivers the notices, or at the offices of the Insurance Institution.

The same rule holds good when the whereabouts of the receiver are unknown.

Sec. 171. *Exemption from Dues and Stamps.*—Exempted from taxes and stamps are all transactions and deeds in connection with the Court of Arbitration and other non-legal negotiations for establishing and settling the legal relationship between the Insurance Institutions on the one hand, and the employers or insured persons on the other hand. The same holds good for private written authorisations and official attestations necessary under this Law for the legalising or the producing of proofs.

Sec. 172. *Legal Aid.*—The public authorities are bound to comply with the requests reaching them from the Imperial Insurance Office, from the State Insurance Offices, from the Courts of Arbitration, from the boards of the Insurance Institutions, and other public officials, in the execution of this Law; and they must also furnish, unrequested, to the boards of the Insurance Institutions all information which may be of importance for the conduct of their business. The same obligation is incumbent upon the boards of the Insurance Institutions as regards each other, as well as regards the officials of the associations of persons engaged in special trades or professions ("Berufsgenossenschaften"), and in the sick fund institutions.

The expenses incurred through the fulfilment of these obligations are to be refunded by the Insurance Institutions as part of their own costs of administration in so far as they consist of the daily expenses of persons employed on official business ("Tagegelder"), of travelling expenses, of fees for witnesses and experts, and of other cash expenditure.

Sec. 173. *Special Benefit Funds.*—The regulations of Secs. 18 to 23, 33, 47 to 52, 54, 55, 99, 100 to 102, 113, 115 to 119, 123 to 127 (pars. 3, 6), 156, 165 (par. 1), 171, 172, are correspondingly applicable also to benefit funds authorised by Secs. 8, 10, 11.

The guarantor for the services (Secs. 68 and 127) devolving on the benefit fund, in so far as it is established for works carried on by the Empire or by a Communal Union, is the Empire or the Communal Union respectively; in other cases the guarantor is the Confederated State in which the industries for which the benefit fund is established are situated. If the benefit fund is established for several industries situated in different Confederated States, the guarantee is afforded by these Confederated States in accordance with the number of persons insured in the benefit fund who were employed in the said industries at the close of the last

financial year. This regulation is correspondingly applicable to the cases under Sec. 101.

Sec. 174.—The contributions, to be collected according to Sec. 32, par. 5, determine the amount to be furnished by the benefit funds to the joint capital, as also the apportionment of the old age pensions after the coming into force of this Law. An apportionment of the pensions fixed by benefit fund institutions takes place only when claim to the same would exist under the prescriptions of this Law, and in so far as they do not exceed the amount of the claim under the Laws of the Empire.

In so far as these benefit fund institutions themselves pay out the pensions fixed by them, without the intervention of the post-offices, the Imperial grant will be assigned to them direct at the close of each financial year.

Sec. 175. *Penal Regulations.*—Employers can be punished by the lower administrative authorities if they state in the documents or announcements to be made by them under the legal regulations or in the regulations issued by the Insurance Institution incorrect facts, of which they must be aware, or which they ought to know; in the cases of pension offices, they can be punished by the chairman of the same with a fine up to 150 marks (7*l.* 10*s.*), and by the directorate of the Insurance Institution with a fine up to 500 marks (25*l.*).

Sec. 176.—Employers who neglect at the right time (Sec. 141) to apply proper stamps to a sufficient amount for the persons employed by them, liable to compulsory insurance, or who neglect to pay in at the right time insurance contributions (Secs. 148, 149) can be punished by the directorate of the Insurance Institution; and, where the control over the contributions is entrusted to the pension offices, such offences can be punished by the chairman of the same with a fine by the directorate up to 300 marks (15*l.*), or by the chairman of the pension office up to 150 marks (7*l.* 10*s.*). • No punishment is inflicted when stamps have been applied at the right time by another employer or manager of works (Sec. 177), or in the case of Sec. 144 by the insured person.

The foregoing regulations are correspondingly applicable to employers who do not fulfil the obligations devolving on them in accordance with Sec. 4, par. 2.

If the employer disputes his liability to contribute, the same is to be fixed in the way specified in Sec. 155.

Sec. 177.—The employer may depute to the authorised managers of his works the filling in of the documents or announcements required in accordance with legal or statutory prescriptions.

The name and place of residence of such authorised managers of works, and the place of collection, are to be communicated to the directorate of the Insurance Institution, and, in cases where the control over contributions is assigned to pension offices, to the chairman of the same.

If such an authorised person commits an act, punishable by

Secs. 175, 176 and 179, the punishments therein provided are applicable to him.

Sec. 178.—Complaint can be made against punishments imposed by the officials of the Insurance Institutions, or by the chairman of the Courts of Arbitration, on the basis of this law, or of the regulations made for carrying it out, or under the codes of rules. When the punishments are imposed under Sec. 176, or in other cases by the chairman of the pension office, or by the chairman of the Court of Arbitration, they are determined by the higher administrative authorities in whose district the seat of the Insurance Institution, pension office, or Court of Arbitration is situated; in other cases they are determined by the Imperial Insurance Office. The complaint is to be lodged, within two weeks after the punishment has been decreed, with the authorities competent to deal with it, and their decision is final.

The fines imposed by the offices specified above, as well as by the administrative authorities, on the basis of this law, flow into the funds of the Insurance Institution.

Sec. 179.—Whosoever does not comply with the obligation to report his arrival and departure from a place which devolves upon him under Sec. 148, will be punished by a fine up to 20 marks (1*l.*). If this occurs in the case of a sick fund institution, the latter receives the fines.

Sec. 180.—The employers and their functionaries are forbidden, either by special agreement or by means of the regulations of the works, to entirely or partially contract themselves out of the application of the regulations of this Law to the prejudice of the insured, or to restrain them from undertaking or discharging honorary offices assigned to them under this Law. Stipulations of contracts which run counter to this Law are illegal.

Employers or their functionaries who offend against this regulation will be punished, in so far as under other Laws no greater punishment is incurred, by fine up to 300 marks (15*l.*), or by imprisonment.

Sec. 181.—The following persons are liable to the same punishment (Sec. 180), in so far as no higher punishment is incurred under other Laws:—

(1) Employers who, when paying out wages, fraudulently charge their employés who are liable to compulsory insurance, with more contributions than are permissible under Sec. 34, par. 4, or Sec. 142; or who neglect to make the deductions from wages provided for under Sec. 109B, par. 4, or to fulfil the obligations resulting from the application of Sec. 52A of the Sickness Insurance Law to the contributions of the infirmity insurance.

(2) Functionaries who effect a larger deduction with fraudulent intent.

(3) Insured persons, who themselves pay the contribution, when they demand with fraudulent intent that the employer should refund more than is permissible under Secs. 34, par. 4, 144 and 145; when they claim the reimbursement of the full contribution for the same contributory week from more than one

employer; or when they neglect to apply the proportion of the contribution collected from the employer to the payment of the contribution.

(4) Persons who illegally withhold a receipt card from the person entitled to it.

Sec. 182.—Employers who, on the basis of Sec. 142, make deductions from the wages of persons employed by them but who do not employ those sums to the purposes of insurance, will be punished, in case a higher punishment is not incurred under other Laws, by fines up to 300 marks (15*l.*), or by imprisonment.

Should the application of contributions be omitted with fraudulent intent in order to enrich oneself or a third party, or to injure the Insurance Institution or the injured, the punishment of imprisonment is incurred, in addition to which a fine up to 3,000 marks (150*l.*), as also the loss of civil rights can be imposed. If there are extenuating circumstances only fines may be inflicted.

Sec. 183.—The penal regulations of Secs. 175, 176, 179 to 182 are also applicable to the legal representatives of employers who are themselves unable to attend to business, and similarly to members of the directorate of a limited liability company, of a corporation or of a registered association, as also to the liquidators of a trading company, of a corporation, or of a registered association.

Sec. 184.—Whosoever makes entries or notices on receipt cards which are not allowed according to Sec. 139, or whosoever falsifies the printed matter on the receipt cards, or the words or numbers entered thereon, or knowingly makes use of such a falsified card is liable to be fined up to 20 marks (1*l.*) by the lower administrative authority, and, where pension offices are charged with the control of the contributions, by the chairman of the same.

If the entries, notices or alterations are made with the object of describing the holder of the receipt card to other employers, a fine up to 2,000 marks (100*l.*), or imprisonment up to six months is incurred. If there are extenuating circumstances, arrest instead of imprisonment may be imposed. Prosecution for counterfeiting documents only takes place when the falsification has been committed with the object of enriching the person who committed the offence or a third party, or of inflicting harm on another person.

Sec. 185.—The members of the directorates and other boards of the Insurance Institutions, as well as the officials who supervise them if they without permission publish business secrets which come to their knowledge in virtue of their office, will be punished by a fine up to 1,500 marks (75*l.*) or by imprisonment up to three months.

The prosecution takes place only at the instance of a business man or trader (" Betriebsunternehmer ").

Sec. 186.—The persons specified in Sec. 185 will be punished by imprisonment, in addition to which the loss of civil rights may be imposed, if they intentionally publish business secrets to the detriment of the proprietors of the business with which they have become acquainted, or if they imitate secret business arrange-

ments or methods which have come to their knowledge by virtue of their office.

If they do this in order to enrich themselves or others a fine up to 3,000 marks (150*l.*) can be imposed in addition to imprisonment.

Sec. 187.—Whoever manufactures counterfeit stamps with the object of employing them as genuine or falsifies genuine stamps with the object of employing them for a higher value, or whoever knowingly makes use of counterfeit or falsified stamps will be punished with imprisonment of not less than three months in addition to which loss of civil rights may be imposed.

Anyone who uses, distributes, or has for sale stamps which he knows or ought to know have already been used is liable to the same imprisonment. If there are extenuating circumstances a fine up to 300 marks (15*l.*) or arrest may be imposed.

At the same time the stamps are to be confiscated without distinction as to whether or not they belong to the condemned person. This confiscation must also be ordered even when a particular person is not prosecuted or condemned.

Sec. 188.—Persons who, without the written order of an Insurance Institution or of an official, commit the following acts will be punished by a fine up to 150 marks (7*l.* 10*s.*):—

(1) Whoever manufactures or gives up to bodies or persons other than the Insurance Institution or the proper official respectively, stamps, seals, engravings, plates, or other moulds which could serve for the preparation of stamps.

(2) Whoever undertakes the copying of the stamps, seals, engravings, plates, or other moulds or whoever delivers copies of the same to bodies or persons other than the Insurance Institution or the proper official respectively.

In addition to the fine or arrest, confiscation of the stamps, seals, engravings, or other moulds, without distinction as to whether they belong to the condemned person or not, can be ordered.

Sec. 189. *Transitional Regulations.*—With insured persons who become incapable of earning a livelihood, within the first five years after obligatory insurance for their particular calling or trade has come into force, the period of a former employment for which the obligatory insurance existed, or which has in the meantime been established, will be reckoned to the necessary period of waiting before a claim to an infirmity pension can be fully established (Sec. 29, par. 1).

This reckoning only takes place, however, when the former employment falls within the last five years before the commencement of the incapacity to earn a livelihood, and only when after the time of the coming into force of the obligatory insurance has existed for the period of at least 40 weeks.

Sec. 190.—In the case of insured persons who at the time when the obligatory insurance for their calling came into force have completed the 40th year of their life, each full year by which their age at this time has exceeded the 40th year, 40 weeks will be

reckoned to the period of waiting ("Wartezeit") for the old age pension (Sec. 29, par. 2), and for the further portion of such a year, the further weeks, but not more than 40. But this reckoning takes place only when such persons have, during the three immediately preceding years, and in the pursuit of their calling, had an uninterrupted employment for which the obligatory insurance already existed or which has since been established. Proof of this will be furnished if within the first five years after the obligatory insurance for the particular calling or trade has been established there has existed for a period of at least 200 weeks an employment entailing obligatory insurance.

Sec. 191.—In the cases of Secs. 189, 190, an illness or the time of military service falling under Sec. 30, par. 2, as well as the time of the previous drawing of an infirmity pension (Sec. 47, par. 4) will be considered as equivalent to conditions of work or service for the time that is to be reckoned up before insurance becomes obligatory.

The same rule holds good for the periods of at most four months during a calendar year.

(1) For periods of temporary interruption of a permanent condition of work or service under a particular employer.

(2) For periods of temporary interruption of an employment in so far as it concerns one, which from its nature is accustomed to be temporarily interrupted for some time every year ("Season-work").

(3) For spinning, knitting, or similar light domestic work undertaken for gain, such as in accordance with the customs of the country, it is customary that elderly or weakly persons should perform.

Sec. 192.—If less than 400 contributory weeks are proved for the old age pension, awarded on the basis of Sec. 190, contributions for the missing weeks of the wages-class will be brought up to an amount which corresponds to the average annual earnings of the insured person from work during the three years specified in Sec. 190, but they must be contributions of the first wages-class. If more than 400 contributory weeks are proved the regulations of Sec. 37 come ipso facto into operation.

Sec. 193.—Claims to pensions or reimbursements of contributions which are still unsettled at the time of the coming into force of this Law, are subjected to the regulations of this Law in so far as it is more favourable to the persons entitled to a pension. The non-application of these more favourable regulations constitutes a ground for appeal in the meaning of Sec. 116.

Sec. 194. *Force of the Law.*—The foregoing regulations, in so far as they relate to the establishment or modification of the institutions necessary to carry out the infirmity insurance come into force on the day of promulgation, but otherwise on January 1, 1900.

In so far as the codes of rules of an Insurance Institution or of a special benefit fund institution admitted on the basis of Secs. 5 and 7, have not by then undergone the alterations required

by the present Law, these alterations will be legally effected by the supervising authorities by virtue of their powers.

The Imperial Chancellor is empowered to publish the text of the Infirmity Insurance Law with the paragraphs numbered in consecutive order through the Imperial Law Gazette ("Reichsgesetzblatt"). Wherever reference is made in Imperial or State Laws to the prescriptions of the Law of June 22, 1889, the corresponding prescriptions of this text are to be substituted for them.

Signed, sealed, and delivered under our hand and Imperial Seal.

Given at Merok in the Geiranger Fiord on board Imperial Yacht "Hohenzollern," July 13, 1899.

(Signed) WILHELM.
GRAF VON POSADOWSKY.

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NEW IMPERIAL GERMAN MORTGAGE BANK LAW.

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Report on the New Imperial German Mortgage Bank Law

By Mr. Consul-General Schwabach.

(Received at Foreign Office, January 8, 1900.)

I.

There are several considerations which have made an Imperial Law necessary to regulate the transactions of mortgage banks in Germany.

According to the Imperial Constitution, every German mortgage bank is at liberty to transact business throughout the whole of the German Empire, no matter in which particular Federal State it may be domiciled. But the whole organisation of the individual bank and the extent of liberty granted to it as regards the scope of its business transactions has hitherto been dependent upon provisions issued by the Government of the individual Federal States. In this respect, therefore, a great difference existed between the mortgage banks in the various Federal States. In particular, far more freedom of action has been allowed to mortgage banks by the Governments of other German States than by that of Prussia. The result has been that relatively many more mortgage banks have been established in the remaining States of the Empire than in Prussia, and that many of such non-Prussian banks in order to maintain their status have been compelled to depend entirely upon business within the limits of the latter Kingdom. In consequence of this diversity of conditions, there has been from year to year an increasing demand for the creation of a uniform basis for all mortgage banks.

This consideration alone, however, would not have been sufficient to ensure the passing of an Imperial law for regulating the mortgage banks. Of like moment was the fact that the economic importance of these banks has enormously increased from year to year. The course of development of mortgage banks in Germany is apparent from the following statistical figures:—

The first mortgage bank was established in Bavaria in the year 1835; from 1836–45, none; 1846, one; 1847–55, none; 1856, one; 1857–61, none; 1862–69, 14; 1870–79, 13; 1880–89, two; and from 1890–99, eight.

Of these 40 mortgage banks, only 14 are domiciled in Prussia.

According to "Der deutsche Oekonomist"—1883, page 500; 1890, page 396; 1899, page 544—the resources and operations of these 40 banks were as follows:—

End of—	Amount of Loans.	Mortgage and Municipal Obligations in Circulation.	Joint Stock Capital.	Reserves.
	Marks.	Marks.	Marks.	Marks.
1881	602,000,000	558,000,000	132,000,000	24,000,000
1889	3,057,753,000	2,859,336,000	320,529,000	61,258,000
1898	6,361,765,000	6,001,278,000	544,019,000	159,690,000

At the end of 1898 there was thus almost as much of the national property invested in mortgage obligations of German mortgage banks as in Prussian State securities.

As a result of this rapid development, the public has from year to year naturally shown an increasing interest in the question as to whether the security afforded to holders of mortgage obligations is adequate, and especially, whether in the event of a mortgage bank getting into difficulties, the hypothecary claims which form the basis on which the mortgage obligations are issued, really serve as security for the mortgagees exclusively, so that, therefore, the hypothecary claims are placed beyond the reach of other creditors.

These have been the real considerations which led to the promulgation of the Imperial Mortgage Bank Law of July 13, 1899.

II.

No attempt will be made here to enter into all the details of the new law, nor to discuss the transitory measures which have been framed with a view to securing in a certain sense jura quæsita for the existing mortgage banks. This would be beyond the scope of the present report. It is only proposed to elucidate the main points of the Mortgage Bank Law in so far as they are of general interest.

According to Clause I of the Act, Mortgage Banks are those "Actiengesellschaften" (Joint Stock Companies) and "Commanditgesellschaften auf Actien" (Limited Liability Companies with unlimited liability of the managers) whose business is to lend money upon real estate and to issue obligations on the security of the mortgages thus acquired.

The Act thus does not distinguish between companies issuing mortgage obligations to bearer, and those issuing registered mortgage obligations. Of the 40 mortgage banks, four issue obligations of the latter class, which are transferred in blank, but negotiated at the exchange in the same manner as obligations to bearer. The mortgage banks which issued registered mortgage obligations have hitherto been quite independent of Government charters, but were free trading companies subject only to the regulations of the Commercial Code. In Prussia, especially, no legislative enactment has existed placing mortgage banks issuing mortgage obligations to bearer under Governmental control, but, on the other hand, there is a law which provides that in Prussia no one may

issue obligations or bonds to bearer without the consent of the State. If, therefore, mortgage banks wished to issue mortgage obligations to bearer in Prussia, they have had to obtain the permission of the State, and this has only been granted on the condition that the particular bank applying for such permit should agree to certain conditions set forth in the Articles of Association, including that of State control.

The Imperial Mortgage Bank Law, however, makes no such distinction between the banks which issue mortgage obligations to bearer and those issuing registered mortgage obligations, but places both classes of banks under Governmental control.

Within the meaning of the Act, mortgage banks can only be either Actiengesellschaften or Commanditgesellschaften auf Actien. There are in several Federal States in addition to the mortgage banks also other credit institutions or associations which issue mortgage obligations to bearer, in Prussia especially the so-called "Landschaften," *i.e.*, banks or county associations of landed proprietors lending upon rural real estate. These Landschaften, in contradistinction to the mortgage banks, are formed upon the co-operative principle. The members of such a credit association consist of those who obtain mortgages on their real estate from the association, and in some cases they are jointly and severally liable for all claims of the mortgage obligation holders. The National-Hypotheken Credit-Gesellschaft of Stettin, for instance, is established on the above-mentioned co-operative principle. It is not, therefore, really a so-called mortgage bank.

According to the new law, only joint stock companies or mortgage joint stock companies (Hypotheken-Actiengesellschaften) are permitted to carry on the business of mortgage banks, as it was considered that it is only by providing joint stock capital that the necessary security can be afforded the mortgage obligations of mortgage banks besides the mortgage claims upon which the said obligations are based.

Inasmuch as the mortgage banks are placed on a uniform legal basis by Imperial legislation, it would have been logical to transfer also the administrative power over all these banks to some Imperial authority, and thus create a uniform system of control applicable alike in all the Federal States. This, however, was not practicable, firstly, because the South German Federal States, in particular, would then have declined altogether to consent to the regulation of mortgage banks by means of an Imperial law; and, secondly, because there is no suitable Imperial authority to whom the control could have been entrusted. Clause 3 of the Act, therefore, provides that the control shall be in the hands of that Federal State in which the particular bank is domiciled.

According to Clause 4 of the Act, the control is entirely unlimited, and there can be no doubt that, if appropriately managed, this control may be successfully exercised. In Prussia it is proposed to augment this administrative power from April 1 by the appointment in the Ministry of a so-called "Bankinspector"

(Inspector of Banks), whose duty it will be to periodically supervise all Prussian mortgage banks. The inspector will, on discovering the existence of any irregularity, report to the Minister with a view to the removal thereof.

But even though the control will not be exercised directly by an Imperial authority, the Empire can, nevertheless, decidedly influence the further development of the mortgage banks, inasmuch as from January 1, 1900, the consent of the Federal Council will be required before any new mortgage bank can be established, and as the consent of the same body is also necessary should any existing mortgage bank desire to alter or amend its Articles of Association. The granting of such permission will depend not only upon the question as to whether the demands to be made in respect of the financial basis of the undertaking, the managers, the contents of the Articles of Association, &c., have been fulfilled, but also upon the decision of the Federal Council as to whether there is any real need for the establishment of new mortgage banks. In this respect, however, it will be by no means a matter of considering only the conditions subsisting in the particular Federal State in which it is intended to establish the bank. This must be regarded as a distinct improvement on the state of affairs hitherto prevailing, where the smallest Federal State was empowered to grant charters to one, or even several mortgage banks, although it was evident that these would be compelled to depend altogether upon business in other Federal States.

In addition to the consent of the Federal Council, a mortgage bank desirous of issuing mortgage obligations to bearer will, as heretofore, require the consent of the Government of the Federal State in which it is domiciled; its Articles of Association, therefore, must have the approval both of the Federal Council and of the Home Government, for the provision that no one may issue bonds to bearer without the consent of the Government has been embodied in the new Civil Code of the German Empire, and will therefore remain in force also after January 1, 1900. If, on the other hand, a mortgage bank about to be established desires to issue only registered mortgage bonds, the consent of the Federal Council only will be necessary in future.

The extent of the business operations of mortgage banks has been clearly defined in Clause 5 of the Act. Mortgage banks are prohibited to engage in speculations of any kind.

They are restricted: (*a*) to the business proper of mortgage banks; and (*b*) to business transactions in connection therewith, and to the profitable investment of their ready money.

The operations included under (*a*) comprise: (*aa*) the grant of loans to proprietors against mortgages upon their real estate (Clause 5, No. 1); (*bb*) the grant of loans to German corporations and public bodies (districts, parishes, &c.) without any mortgage of real estate (Clause 5, No. 2); (*cc*) the grant of loans to Kleinbahngesellschaften (*i.e.*, private railway lines serving chiefly for local traffic and working under State control) against mort-

gages upon the railway (Clause 5, No. 3), and the issue of mortgage obligations (Pfandbriefe) on the ground of loans such as mentioned under (*aa*), of municipal obligations (Communal Obligationen) on loans as under (*bb*) and of private railway obligations (Kleinbahn Obligationen) on loans of the (*cc*) class.

Under (*b*) is included the purchase and sale of securities on commission (Clause 5, No. 4), deposit account business, the buying and selling of bills of exchange and the like.

The circulation limit for mortgage obligations is fixed by Clause 7 at 15 times the amount of paid-up capital, together with 15 times the amount of that part of the reserve fund, which is exclusively devoted to covering any deficit or securing the mortgage obligation holders.

The amount of security requisite for the mortgage obligations is defined and regulated by Clause 6, which stipulates that the sum total of the nominal value of mortgage obligations in circulation must invariably be covered by mortgage claims of at least equal value, and yielding at least the same rate of interest.

For some 20 years the general rate of interest in Germany has, with short intervals, been steadily declining. Several injudiciously managed mortgage banks undertook in the conditions of emission to effect the redemption of the loans according to a definite scheme fixed at the time of issue.

These banks, therefore, were not in a position to recall these loans and withdraw them when the general rate of interest had declined, although they would have been in a position to do so had they reserved to themselves the right at any time of a more speedy redemption than that agreed to in the amortisation schedule, or to recall the loan. On the other hand, when the rate of interest is falling, the mortgages bearing higher rates of interest are recalled and repaid to the mortgage banks, and in place of these it is only possible for the banks to acquire mortgages which yield a proportionately lower rate of interest. If, therefore, the banks are unable at such periods to recall also the mortgage obligations which bear a higher interest and substitute for them those bearing a lower interest, it is obvious that there will gradually result a disproportion between the receipts from mortgage interest and the expenditure in respect of mortgage obligation interest.

A similar disproportion may arise if, at a time when the rate of interest is low, the mortgage banks issue mortgage obligations which may be recalled by the holders. Should the general rate of interest rise, the holders of obligations will exercise their right of recall, and the mortgage banks will only be able to issue and bring into circulation new mortgage obligations bearing a higher rate of interest, whereas, according to the new Mortgage Bank Act, the bank has only a limited right of recall against its mortgagees. In order to guard against a recurrence of such evils, which have actually affected certain mortgage banks, Clause 8 of the Act has been introduced, which provides that mortgage banks may renounce their right to redeem mortgage obligations

for a period not exceeding 10 years, but absolutely precludes them from conceding to mortgage obligation holders the right to recall.

It is to similar considerations that the provision in Clause 9 regarding mortgage obligations issued at a premium is due. Notably in the seventies the mortgage banks frequently issued mortgage obligations redeemable at 105, 110 or 115. According to the condition of the money market, the liberty to issue obligations at a premium may be in the interests both of the mortgage bank and the proprietors of real estate, particularly when, at times when there is a difficulty in obtaining loans on real estate, it is desired to bring into prominence and create a brisk demand for mortgage bonds on the part of the public. Viewed in this sense, the unqualified prohibition to issue mortgage obligations at a premium, as contained in Clause 9 of the Act, can hardly be justified. This prohibition, moreover, cannot be reconciled with the provisions of the Act (Clause 25) regarding discount. According to these provisions mortgage banks are permitted to sell mortgage obligations under par, that is, to issue such obligations at a discount. But in practice it is quite the same whether a mortgage bank issues (as the Act allows) a mortgage obligation for 100 at 90, or issues at 100 a mortgage obligation redeemable at 110, that is, with 10 per cent. premium (which is prohibited by the Act). According to the Act, the bank, in the first instance, as it only receives 90 for the mortgage obligation and has to book the nominal amount of 100 as liability, may enter in the balance sheet four-fifths of the 10 per cent. discount, *i.e.*, 8 per cent. as an asset to be written off in at least 4 years; similarly in the second case, with a mortgage obligation issued at a premium of 10 per cent., it would only be necessary to require that the 10 per cent. premium mortgage obligation be booked as liability with 110 and to enter in the assets, as before, an item of 8 per cent. to be written off in 4 years. There was, therefore, no reason for not granting the mortgage banks the right to issue mortgage obligations at a premium under the same precautionary conditions as they are permitted by the Act to issue mortgage obligations at a discount. In this connection, as well as in several other respects, the error has been committed of endeavouring to regulate the business of mortgage banks even in the smallest particular. As the legislators responsible for this measure did not thoroughly master the subject in question, the Act is in this respect, as in numerous other instances, scarcely consistent with the amount of commercial freedom which, from a liberal economic point of view, should be granted to private companies.

For the sound development of a mortgage bank it is of primary importance whether its mortgage claims offer sufficient security for the mortgage obligations, that is, whether the loans are kept within safe limits and whether the value of the mortgage property has been correctly determined by estimation. This depends entirely upon the ability of the directors.

Be the legal provisions concerning valuation of property and

loan limitation as cautious and appropriate as they may, it is impossible thereby to ensure the soundness of the mortgage loans if a bank is conducted by incompetent directors. On the other hand, capable directors will always see that excessive loans only occur as rare exceptions, no matter what may be the legal regulations as to valuation and loan limitation. These points have been taken sufficiently into consideration in Clauses 10 to 12 of the Act. The regulations as to estimation of value is left to the companies and have only to be submitted for approval to the superintending authorities. The loans may not exceed the first three-fifths, and in the case of agricultural estates, the first two-thirds of the valuation.

This limit also is adequate.

The Act contains a number of provisions which have to be observed by the mortgage banks in contracting loans, in particular as to:—

(*a*) The drafting of the mortgage deeds when the loan is to be paid in mortgage obligations instead of in cash (Clause 14).

(*b*) What latitude shall be allowed to mortgagees in respect to the right of recall and repayment (Clauses 18 and 21).

(*c*) The manner in which, especially in case of loans repayable by means of a sinking fund, the rights and obligations between mortgagees and mortgage banks are to be regulated; what amount, in the case of loans repayable by a sinking fund, the banks may demand for expenses of administration, and how the latter are to be calculated (Clauses 19, 20, and 21).

The majority of these provisions belongs to those hereinbefore referred to in Section 11. The freedom of contract of the banks is by these provisions unnecessarily restricted. For instance, private persons as well as companies very frequently contract mortgages with one year's notice of recall and with the mutual surrender of the right to recall for a period of 15 years. But, according to the Mortgage Bank Act, mortgage banks may only stipulate a 9 months' notice of recall and surrender of the right to recall for a term not exceeding 10 years (Clause 18). A number of other similar cases might be cited.

As has already been pointed out in Section 1 the Act is intended, more particularly, to determine and define precisely the rights which the holders of mortgage obligations shall have on the mortgage claims upon which the said mortgage obligations are based. In former legislative attempts to regulate the business of mortgage banks, the security of the mortgage obligation holders was to be effected by means of the hypothecation (Verpfändung) of the individual mortgages by the bank, and the appointment by the latter of a so-called "Pfandhalter" who was to hold the mortgages as representative of the mortgage obligation holders. But the existing legal provisions regarding lien (Faustpfandrecht) presented many difficulties. They were not easy to reconcile with the mobility requisite in the interests of

the mortgage banking business. A better solution of the difficulty was therefore sought in the new Mortgage Bank Act, and not unsuccessfully. According to Clause 29, the superintending authorities will appoint a so-called "Treuhänder" (Trustee) for each mortgage bank. This official must examine and take charge of every mortgage deed on the basis of which it is proposed to issue mortgage obligations, after convincing himself that the valuation of the mortgage property has been effected in manner prescribed by law, the statutory loan limit observed, and the mortgage claim entered in the so-called "Hypotheken-Register" (Mortgage Register). Further, it will be his duty to see that there is in his charge at all times the prescribed amount of mortgage claims as security for the mortgage obligations in circulation, and none of the mortgage claims entered in the mortgage register can be cancelled without his written consent (Clauses 29 and 30).

In the event of the insolvency of a mortgage bank, as far as concerns satisfaction from mortgages entered in the mortgage register, the claims of the mortgage obligation holders have the preference over those of all other creditors. By virtue of this regulation the security of the mortgage obligation holders is amply provided for. It is true that it is still possible for other creditors of the bank to distrain upon the mortgage claims entered in the mortgage register, so long as the bank has not been actually declared insolvent. Nevertheless, generally speaking, the custodianship of the trustee offers sufficient security; for such a distress in the case of most mortgages (mortgages created by deed) likewise requires the delivering up of the mortgage deed, and both as against bank and distraining creditor (who must have the right of the bank to surrender the deed transferred to himself) the trustee is only compelled to such delivery provided the necessary security for the mortgage obligation is not thereby diminished (Clause 30, Section 2, Sub-section 1, of the Act). The question, however, can scarcely be regarded as being of any practical importance, for as soon as the position of a mortgage bank is such that distraints are preferred against it by creditors, a declaration of insolvency must immediately follow.

The security of the mortgage obligation holders is also further augmented by reason of the detailed provisions of the Act regarding the information which must be published in the annual reports of the mortgage banks, as also by means of the requirements as to the manner in which the profit and loss accounts and the balance-sheet must be made up (Clauses 27 and 28).

The following particulars have to be given:—

(*a*) The profits derived from interest on mortgages, and
(*b*) From commissions on loans contracted;
(*c*) The amount of interest on mortgage obligations paid to the bank;
(*d*) The number of mortgage claims serving as security for the mortgage obligation holders, scheduled according to their amounts in items decreasing by 100,000 marks;

(*e*) The amount of the mortgages on agricultural and on other real estate, as also on building plots or on unfinished, still non-productive, new buildings;

(*f*) The amount of mortgage interest in arrear at the close of the year;

(*g*) How many compulsory administrations and compulsory public sales the bank participated in during the year; the name of any real estate it was obliged to acquire in order to prevent a deficiency in the mortgage claims, and what losses it sustained through the re-sale of such real estate.

From such particulars any person reading the annual reports with attention will be able to ascertain exactly whether a bank is in a sound position and developing its business. There is no class of joint stock companies which is compelled by law to publish equally exhaustive reports, and it must certainly be regarded as practically impossible that any decline in the business of a bank, which might seriously affect the security of the mortgage obligation holders, could be concealed from or escape the notice of the trustee, the bank inspector, or the superintending authorities.

III.

The German mortgage banks have, as may be seen from the statistics given in Section I above, in a comparatively short time developed into an eminently important economic factor in the Empire. Naturally they have had on first establishing themselves to collect experience, errors have been committed and excesses have occurred. Nevertheless only a single small mortgage bank, the Sächsische Hypotheken-Bank, established in Leipsic in 1864, became insolvent (in 1871) resulting in a loss of about 50 per cent. to the mortgage obligation holders. Difficulties have arisen in the case of two other mortgage banks, but without leading in either case to a stoppage of interest, much less to a loss of capital on the part of the obligation holders. If, with these few exceptions, the development of the German mortgage banks has hitherto remained altogether sound, it may be safely concluded that as a result of the new Mortgage Bank Law, which in all essential points may be said to be quite satisfactory, the sound development of the banks will continue undiminished in the future, and that the National property which is being invested in mortgage obligations of German mortgage banks more and more every year, will remain perfectly safe.

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DIPLOMATIC AND CONSULAR REPORTS.

GERMANY.

REPORT ON THE

GERMAN COLONIAL ESTIMATES FOR 1900.

Presented to both Houses of Parliament by Command of Her Majesty,
APRIL, 1900.

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Report on the German Colonial Estimates for 1900 *by Mr. Townley, Second Secretary in Her Majesty's Embassy at Berlin.*

(Received at Foreign Office, March 31, 1900.)

It is asserted that the German colonies are essential to the further development of the German Empire as a Power in the World, and it is urged in their favour that they are for the most part in a very flourishing condition, but it cannot be denied that they are a very expensive item to be taken into the calculations of the Imperial Minister of Finance in his annual estimates. The supporters of a German colonial policy advocate their maintenance as an outlet for the German surplus population and as a field for German trade.

The German Exchequer is, however, asked to find about 1,323,920*l.*, on account of the German colonies for the present financial year, or 558,729*l.* more than was asked for last year, and more than three times as much as was asked for in the 1897–98 estimates.

The returns would appear to show that the colonies are in a flourishing condition for the most part, but it is worthy of notice that it is considered advisable to increase the military strength in all the German African possessions, except in Togoland. Naturally more police are required as the countries become more developed, but it is to be feared that in the Cameroons and in South-West Africa, the troops allowed for will prove insufficient to meet the requirements of the situation. The Cameroons are in a disturbed state, and the development of the mineral resources of South-West Africa can only be attended with a very considerable increase in the cost of the police force.

The projected central railway in German East Africa may be expected to cost at least 600,000*l.* for the first stage to Mrogoro, although most satisfactory results for the future prosperity of the colony are anticipated from its being thus opened up.

In the Cameroons considerable expenditure is allowed for on account of military posts necessary to safeguard the advanced positions acquired, and to secure the safety of future expeditions into the hinterland; whilst the construction of important roads forms a large item in the estimated expenditure of the colony.

Kiao-Chao still remains a very heavy call on the Imperial finances, and only about 10,000*l.* out of an estimated expenditure

of close upon 500,000*l.* can be defrayed by the resources of the colony.

An item which finds no place in the colonial estimates, but which is strictly connected with the development of the German East African possessions, is the State subvention of 45,000*l.* which has been made since 1890 for the German Mail Service to Delagoa Bay viâ the Suez Canal. It is, moreover, said that a further vote of 15,000*l.* is to be asked for to enable the service to be carried on to the Cape.

EAST AFRICA.—REVENUE.

	Estimates, 1900.	Budget, 1899.	Increase.
	£	£	£
Taxes	28,000	17,500	10,500
Customs..	87,500	87,500	..
Various administrative revenues ..	30,660	20,500	10,160
Railway returns	4,270	..	4,270
Imperial subsidy	341,545	301,775	39,770
Total	491,975	427,275	64,700

East Africa.—Expenditure.

	Estimates, 1900.	Budget, 1899.	Increase.	Decrease.
	£	£	£	£
Permanent—				
Salaries	33,343½	33,065	278½	..
Pensions	2,143	1,595	547	..
Personal expenses—				
Whites	19,912½	16,562½	3,350	..
Blacks	26,010	21,385	4,625	..
Miscellaneous	76,060	55,820	20,240	..
Military administration ..	112,769	105,181	7,588	..
Flotilla	34,785	33,108½	1,676½	..
Railway working expenses	4,142	..	4,142	..
Relief fund	600	400	200	..
Sinking fund on debt to East African Company ..	30,000	30,000	..	..
Total permanent ..	339,765	297,117	42,647	..
Non-recurring—				
Buildings	12,450	12,000	450	..
Dar-es-Salaam floating dock	16,500	15,000	1,500	..
Continuation of railway from Muhesa to Korogwe	115,450	100,000	15,450	..
Dar-es-Salaam hospital ..	1,150	..	1,150	..
Completion of survey of railway from Dar-es-Salaam to Mrogoro, and telegraphic connection between Dar-es-Salaam and Kilossa	6,000	..	6,000	..
Famine fund	..	2,500	..	2,500
Total non-recurring ..	151,550	129,500	22,050	..
Reserve fund	660	657	3	..
Total	152,210	130,157	22,053	..
„ permanent ..	339,765	297,117	42,647	..
Grand total	491,975	427,275	64,700	..

Cameroons.—Revenue.

	Estimates, 1900.	Budget, 1899.	Increase.
	£	£	£
Taxes	1,600	1,400	200
Customs	50,000	30,000	20,000
Various administrative receipts ..	7,500	5,100	2,400
State subsidies	59,885	49,170	10,715
Total	118,985	85,670	33,315

CAMEROONS.—EXPENDITURE.

	Estimates, 1900.	Budget, 1899.	Increase.	Decrease.
	£	£	£	£
Permanent—				
Salaries	4,426	10,395	..	5,969
Supplementary salaries ..	7,119	..	7,119	..
Protectorate troops ..	10,075	7,930	2,145	..
Pensions	1,386	886	500	..
Personal expenses—				
Whites	14,286	12,214	2,075	..
Blacks	33,144	22,905	10,236	..
Assistance to officials and soldiers	175	175	..	..
Miscellaneous	29,835	21,125	8,710	..
Non-recurring—				
a. Public works	11,000	7,000	4,000	..
b. Roads and bridges ..	6,500	.	6,500	..
c. Harbour work	..	2,000	..	2,000
Reserve for unforeseen expenses	1,039	1,040	..	1
Total	118,985	85,670	33,315	..

TOGOLAND.—REVENUE.

	Estimates, 1900.	Budget, 1899.	Increase.	Decrease.
	£	£	£	£
Taxes..	1,000	1,350	..	350
Customs	21,250	25,000	..	3,750
Various administrative receipts	1,750	1,150	600	..
Imperial subsidy	13,500	12,705	795	..
Total	37,500	40,205	1,395	4,100
„ decrease ..	..	..	2,705	

TOGOLAND.—EXPENDITURE.

	Estimates, 1900.	Budget, 1899.	Increase.	Decrease.
	£	£	£	£
Permanent—				
Salaries	1,835	4,325	..	2,490
Supplementary salaries ..	3,000	..	3,000	..
Protectorate troops ..	1,635	2,310	..	675
Pensions	268	232	36	..
Personal expenses—				
Whites	3,170	3,170	..	..
Blacks	5,485	7,100	..	1,615
Assistance to officials and soldiers	100	100	..	..
Miscellaneous	16,436	15,986	450	..
Total permanent ..	31,929	33,223	..	1,294
Non-recurring—				
Public works	4,750	4,750	..	..
Works on landing-stage at Lome	..	1,500	..	1,500
Reserve fund	731	732	..	1
Grand total ..	37,410	40,205	..	2,795

SOUTH-WEST AFRICA.—REVENUE.

	Estimates, 1900.	Budget, 1899.	Increase.
	£	£	£
Taxes	2,000	500	1,500
Customs..	35,000	25,000	10,000
Various administrative revenues ..	3,650	2,000	1,650
Railway returns	9,000	1,000	8,000
Imperial subsidy	359,065	345,450	13,615
Total	408,715	373,950	34,765

SOUTH-WEST AFRICA.—EXPENDITURE.

	Estimates, 1900.	Budget, 1899.	Increase.	Decrease.
	£	£	£	£
Permanent—				
Salaries	3,945	7,902½	..	3,957½
Supplementary salaries ..	5,745	..	5,745	..
Protectorate troops ..	55,177½	55,137½	40	..
Pensions	4,981½	2,900	2,081½	..
Other personal expenses—				
Whites	14,602	9,023½	5,578½	..
Blacks	6,250	6,250	..	..
Assistance to officials and soldiers	275	275	..	..
Miscellaneous	122,165	109,447½	12,717½	..
Railway	9,000	1,000	8,000	..
Total permanent ..	222,141	191,936	30,205	..
Non-recurring—				
Public works and buildings	25,500	17,000	8,500	..
Paying-off troops	2,550	12,000	..	9,450
Extra pay to sanitary officials	800	1,000	..	200
Horse and cattle breeding..	2,000	4,000	..	2,000
Continuation of telegraph and railway from Swakopmouth to Windhoek ..	115,000	115,000	..	..
Swakopmouth harbour works	17,500	25,000	..	7,500
Assistance to German colonists	5,000	..	5,00	..
Cavalry equipment ..	3,500	..	3,500	..
Construction of a provender and equipment storehouse	12,500	..	12,500	..
International telegraph connection	..	4,590	..	4,590
Coast lights	..	1,200	..	1,200
Reserve fund	2,224	2,224	..	..
Total non-recurring..	186,574	182,014	4,560	..
„ permanent ..	222,141	191,936	30,205	..
Grand total	408,715	373,950	34,765	..

NEW GUINEA.

	Estimates, 1900.	Budget, 1899.	Increase.
REVENUE.	£	£	£
Taxes and customs	3,750	3,750	..
Imperial subsidy	42,425	32,850	9,575
Total	46,175	36,600	9,575
EXPENDITURE.			
Administration	46,175	36,600	9,575

CAROLINE, PALAU AND MARIANNE ISLANDS.

	Estimates, 1900.	Budget, 1899.	Decrease.
REVENUE.	£	£	£
Imperial subsidy	18,500	23,250	4,750
EXPENDITURE.			
Administration	18,500	23,250	4,750

KIAO-CHAO.—REVENUE.

	Estimates, 1900.
	£
Sale of land	7,500
Taxes	1,250
Other sources of revenue	1,912
Imperial subsidy	489,000
Total	499,662

KIAO-CHAO.—EXPENDITURE.

	Estimates, 1900.
	£
Permanent—	
Civil administration	39,206
Military administration	93,220
Mixed civil and military expenditure	66,307
Total permanent	198,733
Non-recurring—	
Public works (harbours, roads, irrigation, &c.)	246,250
Participation in construction of residential and labourers' houses	10,000
Rivers and forests	16,250
Armament	15,000
Lights and surveys	8,751
Reserve fund	4,678
Grand total	499,662

East Africa.

The estimates for 1900 make provision for a considerable increase, about 10,500*l.*, in the returns from the house and hut tax which last year produced nearly 90,000 rs. above the estimate of 1,92,000 rs. in the 1899 budget, in spite of the fact that

drought and famine rendered it impossible to levy the tax in many districts of the interior.

It is estimated that the miscellaneous sources of revenue should produce about 10,000*l.* more than was calculated for in the previous estimates. It is expected that the forests, steamboat trade on the lakes and the Kurassini plantations will together contribute the expected increase of revenue.

The Imperial subsidy asked for is nearly 40,000*l.* more than that accorded by the 1899 budget.

Nearly 8,000*l.* more will be required, it is estimated to meet the demands on skilled and manual labour called for by the increased prosperity and development of the colony.

20,000*l.* more than last year are asked for to meet the miscellaneous expenses, under which heading come hospitals, technical schools, police equipment, doctors, &c.

It is estimated that the military administration will cost about 7,500*l.* more than last year.

The increase of the Flotilla by the sea-going steamer "Kaiser Wilhelm II," and the placing of an aluminium pinnace on the Victoria Nyanza has increased working expenses by about 1,600*l.*

A new item of about 4,000*l.* is the estimated cost of the working expenses of the railway.

The cost of the continuation of the railway Tanga-Muhesa to Korogwe, and of the surveying of the route to be followed in the prolongation on to Mombo is estimated to cost an additional 15,450*l.*

A second new item is one of 1,150*l.* for the Dar-es-Salaam hospital.

The 6,000*l.* asked for to meet the expenses to be incurred in the surveying operations for the East African Central Railway from Dar-es-Salaam to Mrogoro, together with a telegraph line, is only the first instalment of a scheme which it is said will cost about 600,000*l.* It is probable that a Supplementary Vote will be asked for this year for the above purpose.*

Cameroons.

It is estimated that the customs which have given a steady increase during past years will produce about 20,000*l.* more than last year, although it is acknowledged that imports have fallen off somewhat since the introduction of the higher tariff in March last year.

The Imperial subsidy asked for is 10,700*l.* more than that voted last year.

An increase of 2,000*l.* is asked for on behalf of the protectorate

* The Imperial subsidy to be made to the German East African Protectorate has been reduced by 6,542*l.* in the Reichstag, a diminution of 1,542*l.* being made on the allowance for the Protectorate troops, and the 5,000*l.* asked for to meet the expenses of the Dar-es-Salaam to Mrogoro railway survey having been refused.

forces, and it is probable that the amount required for the military administration will have to be considerably augmented next year.

The development of the colony will necessitate a larger staff of both black and white skilled and manual labour (as also for constabulary service), the increase asked for amounting to 12,000*l.*

It is calculated that miscellaneous expenses will amount to 8,710*l.* more than last year. The chief items of additional expenditure are stated to be 2,500*l.* for the frontier delimitation in the Sanga-Ngoko district, 2,500*l.* in aid of cattle rearing, and 2,500*l.* for an expedition to establish a military post necessary for the further opening up of the hinterland towards Lake Chad and for the safe-guarding of the successful results gained by the Adamana expedition.

6,500*l.* are asked for to meet the expenses of the construction of roads from Victoria to Johann Albrecht's Hoehe viâ Buëa and Lisoka, and from Victoria to M'Benga, viâ Boniadikombo and Moliwe.*

Togoland.

It is calculated that customs and taxes will produce about 4,000*l.* less than was estimated for in 1899, but it is explained that repeated bad harvests have reduced the purchasing power of the colonial traders, though it is hoped that the better harvest of last season may prove a forerunner of more prosperous times. The demands on the Imperial Treasury have been increased by 795*l.*, from 12,705*l.* to 13,500*l.*

A reduction of 675*l.* is estimated for in the expense entailed by the military administration of the colony, and about 1,600*l.* less than last year are asked for on account of the coloured labour required.

South-West Africa.

It is estimated that taxes, customs and other sources of revenue should produce about 13,000*l.* more than last year. The railway returns are expected to bring in about 9,000*l.* in place of the 1,000*l.* at which they were estimated last year, but it will be seen that the increased cost of working expenses will require the entire surplus.

The Imperial Treasury will be asked to increase the Imperial subsidy from 345,450*l.* to 359,065*l.*, an increase of about 13,615*l.*

It is estimated that the pensions item will be nearly doubled, being raised from 2,900*l.* to 4,980*l.*, and the demand for white labour will cost the colonial finances about 5,500*l.* more than was asked for last year.

* A supplementary grant of 43,265*l.* has been laid before the Bundesrath on behalf of the Cameroons Protectorate, partly to meet the expenses entailed by a considerable increase of the Protectorate forces, and partly on account of public works.

The miscellaneous item has been increased by 12,700*l.*, chiefly on account of the expenses to be incurred in lighting the coasts, in maintaining war and other prisoners, in establishing and fitting up stations in the interior, and in prolonging the labours of the Eastern Boundary Frontier Commission for another year.

Public works will require 8,500*l.* more than last year, but a saving of some 11,500*l.* will be made on the paying off of time-expired troops and on horse breeding. A further saving of 7,500*l.* will be made on the harbour works at Swakopmouth, but 5,000*l.* will be required for the assistance of German colonists (mostly time-expired soldiers), 3,500*l.* for cavalry equipment and 12,500*l.* for the construction of a storehouse.

New Guinea.

The Imperial subsidy has been increased by 9,575*l.*

Caroline, Palau and Marianne Islands.

It is estimated that the islands will cost 4,750*l.* less to the Imperia Treasury than last year.

Kiao-Chao.

The sources of revenue are only estimated to produce about 10,500*l.*, and the remainder, nearly 490,000*l.*, required for the administration and development of the colony will have to be supplied from the Imperial Treasury.

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No. 525 Miscellaneous Series.

DIPLOMATIC AND CONSULAR REPORTS.

GERMANY.

MEMORANDUM ON

GERMAN IMPORTS AND EXPORTS OF "IRON AND IRONWARE" AND "IMPLEMENTS, MACHINES," &c., FROM 1897 TO 1899.

REFERENCE TO PREVIOUS REPORT, Miscellaneous Series No. 462.

Presented to both Houses of Parliament by Command of Her Majesty,
MAY, 1900.

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HODGES, FIGGIS, & Co., Limited, 104, Grafton Street, Dublin.

1900.

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No. 525. Miscellaneous Series.

Reference to previous Report, Miscellaneous Series No. 462

Memorandum on German Imports and Exports of "Iron and Ironware" and "Implements, Machines, &c." from 1897 to 1899 by Mr. Gastrell, Commercial Attaché to Her Majesty's Embassy at Berlin.

(Received at Foreign Office, May 14, 1900.)

The subject of the German iron trade is one that is always of interest to British manufacturers, on account of the great competition all over the world of German with British iron manufactures. In June, 1898 (No. 462 Miscellaneous Series), a short memorandum dealing with this question was published by the Foreign Office comparing German imports and exports of "iron and ironware," and of "implements, machines, &c.," in the two years 1896 and 1897. Since then the technical German publication, "Stahl und Eisen," has published further valuable tables dealing with the years 1897 to 1899 (Tables I to IV annexed). In the statement on the trade in 1896 and 1897, some items were not strictly comparable, on account of certain changes in statistics which came into force on January 1, 1897. The three years now compared, 1897 to 1899, are, however, correctly comparable in every item. They will doubtless prove valuable to the British iron trade.

The tables explain themselves, and attention is only drawn to the few following figures:—

Imports.

On comparing the statistics for 1897 and 1899 we find these results for total imports into Germany:—In 1897 an importation of "iron and ironware" of 564,745 metric tons, valued at 3,426,750*l.* (or 68,535,000 marks), versus one of 839,839 metric tons valued at 5,029,750*l.* (or 100,595,000 marks) in 1899, and an importation of "implements, machines, &c.," of 82,457 metric tons, valued at 2,449,950*l.* (or 48,999,000 marks), versus one of 150,439 metric tons, valued at 3,792,700*l.* (or 75,854,000 marks). This shows an increase in the three years of 275,094 tons, valued at 1,603,000*l.*, for the former, and of 67,982 tons, valued at 1,342,750*l.*, for the latter.

Exports.

Meanwhile, the movement in exports from the German Empire has been, as regards total, in 1897, an exportation of "iron and ironware" of 1,392,953 tons, valued at 16,389,750*l.* (or 327,795,000 marks), versus one of 1,509,887 tons, valued at 20,490,400*l.* (or 409,808,000 marks) in 1899, and an exportation of "implements, machines, &c.," of 210,518 tons, valued at 9,354,500*l.* (or 187,090,000 marks), versus one of 283,245 tons, valued at 12,344,500*l.* (or 246,890,000 marks). This shows a development in the three years of 116,934 tons, valued at 4,100,650*l.*, for the former, and of 72,727 tons, valued at 2,990,000*l.* for the latter.

Turning to the iron trade between Great Britain and Germany we obtain the following results, which are best tabulated :—

Descript

.. .. ..

. slag-hair.. ..

.. .. ..

scrap-iron ..

.. .. ..

, hoops, bands, bloc

angle-iron.. ..

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.. .. ..

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plough-shares ..

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cast-iron wares ..

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Descri

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l scrap-iron .

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l plough-shares .

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ound, polished, &c

.. .. .

wire .. .

ered, covered with

cast-iron wares .

British East Indies.	China and Hong-Kong.	French Upper India.
..	..	..
..	..	..
..	..	..
..	..	..
40	41	..
..	..	..
428	2,560	..
..	4,838	..
..	100	..
..	..	..
23	..	..
..	..	..
991	14	..
738	..	..
149	72	..
..	..	
102	949	..
133	132	..
629	4,215	..
810	4,459	..
892	41	..
571	..	..
55	2	..
..	..	..
3	37	..
..	..	..
599	1,952	2
..	1,626	..
512	1,234	
..	2,279	..
9	8	0
..	..	..
20	10	..
..	..	..
2	2	..
..	..	..

	China and Hong-Kong.	French Upper India.	Japan.	Coren.	
	..	..	..	..	
	..	..	..	..	
	..	..	..	..	
	..	..	..	..	
40	41	..	..	..	
	..	..	..	..	
28	2,500	..	10	..	
	4,838	..	..	..	
	100	..	10	..	
	..	..	..	..	
23	..	..	2	..	
	..	..	..	..	
91	14	..	84	..	
38	..	..	..	..	
49	72	..	435	..	1
	..	..	..	..	1
02	949	..	7,201	..	15
33	132	..	1,761	..	14
29	4,215	..	14,233	..	1
10	4,459	..	11,886	..	2
92	41	..	473	..	
71	..	..	..	..	
55	2	..	13	..	
	..	..	..	..	
3	37	..	..	.	
	..	..	..	..	
99	1,952	2	1,301	..	
	1,626	..	739	..	
12	1,234		6,771	..	
	2,279	..	2,266	..	
9	8	0	24	..	
	..	..	..	.	
20	10	..	62	0	
	..	..	..	..	
2	2	..	..	..	
	..	..	..	.	

British East Indies.	China and Hong-Kong.	French Indo-China.
..	..	
..	..	
..	..	
7	..	
..	..	
263	4,873	
..	1,914	
0	..	
..	..	
43	..	
..	..	
1,738	59	
1,409	..	
160	30	
..	2,285	
..	..	
1,133	132	
889	1,178	
9,810	4,459	
3,236	5,718	
4,571	37	
4,867	..	
11	24	
..	..	
3	1	
..	..	
336	1,62	
..	1,4	
730	2,27	
532	1,56	
10	14	
..	..	
6	1	
..	..	
1		
..	..	
..		
..	.	4

British East Indies.	China and Hong-Kong.	French Upper India.	Japan.	Corea.	Netherlands India.
..	..	..	..	..	..
..	..	..	..	..	..
..	..		..	..	..
..	..	..	..	..	..
7	..		..	..	203
..	..	..	..	..	..
263	4,873	..	93	..	20
..	1,914	..	..	..	..
0	..	..	15	..	11
..	..	..	..	.	..
43	..	..	..	..	..
..	..	..	..	..	..
1,738	59	.	95	..	190
1,409	..		..	..	912
160	30	.	89		1,913
..	2,285	..	..	..	1,030
..	..	..	..	..	510
1,133	132	..	1,761	..	14,176
889	1,178	.	231	.	14,192
9,810	4,459	.	11.886	..	2,460
3,236	5,718	.	5 810	..	492
4,571	379	..	290	..	153
4,867	..	..	..	..	..
11	24	..	..	..	69
..	..	..	..	..	..
3	15	..	..	..	0
..	..	.	..	..	..
336	1,626	..	739	..	166
..	1,486	..	1,242	..	..
730	2,279	..	2,266	..	426
532	1,569	..	2,714		700
10	141	..	92	..	450
..	..	..	..	..	764
6	10	..	25	..	125
..	..	..	..	..	..
1	3	..	..	..	2
..	..	..	..	..	..
..	3	.	74	..	1,708
..	418				1,924

TABLE of Iron Trade between Great Britain and Germany, 1897 and 1899.

Years.	Imports from Great Britain.				Exports to Great Britain.			
	Iron and Ironware.		Implements, Machines, &c.		Iron and Ironware.		Implements, Machines, &c.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Met. tons.	£	Met. tons.	£	Met. tons.	£	Met. tons.	£
1897	415,021	1,770,700	41,219	1,296,750	131,367	1,474,850	11,036	917,050
1899	354,851	1,612,600	42,769	1,422,150	134,852	1,565,150	13,715	1,047,250
Difference in 1899 ..	− 60,170	− 158,100	+ 1,550	+ 125,400	+ 3,485	+ 90,300	+ 2,679	+ 130,200

In the Tables will also be found figures for the German trade with British Colonies.

Explanatory Notes.

I.

It is only for the first year in each table that the full amounts are entered under each scheduled country; for the second year only sums of a certain importance are inserted. But, in the last two right-hand columns, the full total for both the years quoted in the table are entered up.

II.

British East Africa includes British East Africa and the following British Islands: Admiral Islands, Mauritius, the Seychelles, Socotra, Pemba, &c.

British South Africa includes the Cape Colony, Basuto-, Bechuana-, Nyassa-, Zulu-, and Tongaland, the Possessions of the South African Company and Natal.

British West Africa includes Gambia, the Gold Coast, Lagos, the Niger Territories, Sierra Leone, Ascension Island, St. Helena, and Tristan d'Acunha Islands.

British East Indies include the British Possessions and Protectorates in Upper and Lower India and in the Indian Ocean.

British North America includes the Bermuda Islands.

British West Indies include all British Possessions in the West Indies, in Central America, and in Northern South America.

British Australia includes all British Possessions and Protectorates in Australasia and in Polynesia.

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No. 528 Miscellaneous Series.

DIPLOMATIC AND CONSULAR REPORTS.

GERMANY.

REPORT ON THE

GERMAN COLONIES FOR THE YEAR ENDING JUNE 30, 1899.

REFERENCE TO PREVIOUS REPORT, Miscellaneous Series No. 474.

Presented to both Houses of Parliament, by Command of Her Majesty,
JUNE, 1900.

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1900.

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No. 528. Miscellaneous Series.

Reference to previous Report, Miscellaneous Series No. 474.

Report on the German Colonies for the Year ending June 30, 1899, by Mr. Townley, Second Secretary to Her Majesty's Embassy at Berlin.

(Received at Foreign Office, May 25, 1900.)

General remarks.

The number of Europeans resident in the German African Protectorates, viz., Togoland, Cameroons, South-West Africa, and East Africa, at the time of the issue of the latest colonial reports* in the course of 1899 is given as 4,522 men, women, and children, of whom 3,228 were Germans.

The expense to the home Government of the African colonies, together with Kiao-chao in the Far East, the Caroline and Samoa Islands in the South Seas, and German New Guinea and its dependencies, is estimated at close upon 1,500,000*l.* for 1900, the Imperial Treasury being asked to grant in subsidies a sum nearly double that required last year. Kiao-chao is included for the first time in the Colonial Estimates, and Samoa is a new item. The Imperial subsidy has been increased for each separate Protectorate, with the single exception of the Caroline Islands, which are to be granted 5,000*l.* less than last year. East Africa receives about 33,000*l.* more; the Cameroons, 10,000*l.*; South-West Africa, 14,000*l.*; Togoland, 800*l.*; New Guinea, 10,000*l.*; and the new items are: 489,000*l.* for Kiao-chao (formerly included in the Naval Estimates), and 2,500*l.* for Samoa. A Supplementary Vote of 43,265*l.* for the Protectorate troops in the Cameroons is also now before the Budget Committee.

Several very dry seasons have somewhat retarded the progress of the plantations in German East Africa, and the Usambara coffee crop has suffered more especially. From Togoland also have come complaints of drought that has done great damage to the plantations, but later accounts report that copious rains had made the last harvest much more satisfactory, and had caused trade to revive. Great progress has been made in the development and opening up of the Protectorate. The Cameroons plantations have made great strides, and there were twice as many labourers employed on them in 1898–99 as in the previous year. A successful expedition into the Bali country, which produced 700 labourers for the coast districts, had encouraged the hope that the Protectorate would become self-supporting for its labour supply,

* These reports were laid before the Reichstag in January and February, 1900.

and would no longer have to depend upon imported labour from Liberia and elsewhere. Unfortunately, disturbances, attended with the loss of several valuable lives, have broken out, and it now appears probable that the supply of labour from the north, to which the plantation owners were looking forward for the further development of their lands, will be stopped for a time at least. The formation of the rich and powerful North-West Cameroons Company should materially assist the commercial and agricultural expansion of the country. Bad weather seriously interfered with the export trade in guano in South-West Africa, and caused a considerable falling-off in the receipts from the export duties. Agriculture is not in a very flourishing condition, but efforts are being made to improve the means at the disposal of the settlers by the construction of dams and the introduction of skilled advice. The rinderpest would appear to have been almost completely stamped out. The Windhoek Railway is progressing, but very slowly. German East Africa has suffered severely from famine and disease, but every effort has been made to relieve the one, and to stem the tide of the other by vaccination, which has now become almost general throughout the Protectorate. The railway question has reached an acute stage, and has been marked by the statement, officially made in the Reichstag, to the effect that German speculators have shown considerable reluctance to invest their money in German colonial railway undertakings. The completion and prolongation of the Tanga–Muhesa line has been voted by the Reichstag. A grant of 5,000*l.*, asked for to enable the survey for a line from Dar-es-Salaam to Mrogoro to be completed, was refused, and the construction of the so-called East African Central Railway would appear, therefore, to be indefinitely postponed. Nearly all the competent colonial authorities in Germany are in favour of the immediate construction of the line, and point to its urgent need, both as a means to open up the interior of the Protectorate, and as a rival to the various other Central African Railways which threaten to draw away the East African trade.

The statistics of trade in the African colonies are as follows for 1898:—

	Value.
	£
Total imports	1,480,480
„ exports	620,540

Great efforts have been made to encourage German trade with the African colonies, and it is shown that considerable success has been attained in South-West Africa, where the total value of goods imported from Germany amounted to 244,187*l.*, as against 181,961*l.* in the previous year, with an appreciable falling-off in the value of imports from other countries. In East Africa the

greater part of the import trade still comes from India and Zanzibar—about 450,000*l.* worth of goods out of the gross total of 592,630*l.* having been imported thence. The export trade is also largely carried on through Zanzibar.

The importance of the German Colonial Empire has been largely increased by the events of the past year, which have given a great impetus to the colonial aspirations of Germany. First of all, in June, 1899, the negotiations carried on with the Spanish Government with a view to the purchase by Germany of the Caroline, Marianne, and Pelew Islands were brought to a satisfactory conclusion, the islands, with the exception of Guam, in the Marianne group, which remains to America, being ceded to Germany. Then came the Agreement of November 14, 1899, between Great Britain, Germany, and the United States, which provided for the partition of the Samoan Islands, by which Germany acquired Savaii and Upolu, and the United States received Tutuila—Great Britain withdrawing from the group. In return, Germany renounced all rights over Tonga, Vavau, and Savage Islands, and ceded all the islands of the Solomon group lying to the east and south-east of Bougainville to Great Britain. Further, an arrangement concerning the neutral zone between Togoland and the adjoining British possessions in West Africa was concluded in the same Convention, and it is probable that the frontier will consequently be finally delimitated at an early date.

Important postal regulations came into force on April 1, 1900, which are intended to greatly facilitate postal communications between Germany and her colonies, as also between the various colonies themselves.

Togoland.

Population. The white population in 1899 consisted of 107 Germans, 2 Frenchmen, 3 Englishmen, 2 Austrians, 1 Luxemburger, 3 Swiss—in all, 118 Europeans, of whom 47 are officials, 33 merchants, 34 missionaries, 2 explorers, and 2 planters. There is an increase since the previous year of 7 officials and 7 merchants, and a decrease of 4 missionaries. There are 17 women in the colony, mostly wives of missionaries or mission nurses. There were no European marriages in 1899. Two European children were born, of whom one died. There were 7 deaths in the course of the year, of which 5 were among residents. The death of Dr. Wicke was an immense loss.

Towns. Lome has made great strides. Broad avenues and streets have been cut through the bush, with the result that many building plots have been taken up. While the new town is thus making progress, the old one has also been much improved. The general population has not much increased in spite of the increase in trade, because many native dealers prefer to reside in the Haussa village close by, from which Lome is supplied with fresh meat. A good many natives have been enlisted for work in the Cameroons plantations.

Climate. Very heavy rains fell from the spring of 1898 until November, causing the water supply to be unusually copious and giving hopes of an extra good harvest, hopes which were partially realised without the appearance of any serious epidemics. The wet weather was also favourable to the culture of such shady trees as *Eryodendron anfractuosum* (used for canoes), *Eryotroxylon coca*, and *Terminalii catalpa*, whilst the planting of *Calophyllum inophyllum* and *Michelia Champaca* and, in a less degree, *Artocarpus incisa*, has been attended with great results.

Cattle. Cattle-breeding is carried on on a large scale in the Sansanne-Mangu Moba Land and in the Kirikri districts, but the trade goes to the Gold Coast Colony, and hardly touches the coast district. In Lome there are one or two herds of cattle; there are more in Little Popo, and the trade between Atakpama and the coast has increased considerably, whilst the Atakpama cattle have been found suitable for draught, and have been employed for that purpose on the plantations. Sheep, goats, poultry, and a species of pig, only used for food by the natives, are distributed all over the colony, but nowhere in large quantities, and are especially meagre in the oil-palm districts.

Horses. Horses of a small stamp are only bred in the Sansanne-Mangu and Sokodé districts, and the experiment of bringing large horses from the interior to the sea-coast has not been successful, as the animals do not live long.

Trade and navigation. Complaints of slackness in trade ceased about December, 1898, when the effects of the wet season began to be felt, and large quantities of palm-oil and palm-nuts appeared on the market; but the merchants seemed unprepared for a better state of things, or else a bad year had made credit tighter, for there was a decided want of money shown.

The export of maize and earth-nuts exceeded all expectations, but it is only next year that a noticeable increase of copra export may be expected.

The total value of the exports amounted to about 100,785*l.* (2,015,708 marks), or 46,356*l.* (927,119 marks) more than last year. The total value of the imports was 151,480*l.* (3,029,598 marks).

The ports of Togoland were visited by 218 ships, with a gross registered tonnage of 287,700 tons. The port of Lome was visited by 59 German ships, 1 German warship, 29 British vessels, 19 French ships, and 2 American sailing-ships. The port of Little Popo was visited by 55 German ships, 31 British ships, and 21 French steamers, also by 2 British sailing-ships.

Means of communication and roads. The road from Misahoehe to Lome is by far the most used in the colony; it was much injured during the heavy rains, and a great deal of time and money had to be spent on repairing it and on building bridges—work that had to be suspended when the heavy rains came on again. The other most important road in the colony is that from Atakpama to Lome.

Postal service. The chief post-office will soon be transferred to Lome. The post-offices of the colony are united by a telegraph wire, which is

in communication with the Gold Coast on the west and with Dahomey on the east. Letters are sent by French and British lines, and by the Woermann line to Hamburg.

Schools. There are 47 pupils in the Government school, and only one has attained a sufficient age to enter the Government service during the past year.

Missions. The Government grant of 1,000 marks has also been made to the Basle Mission. The four Missions have extended the scope of their labours and augmented the number of their pupils.

Administration. The sea-coast portion of the colony has been divided into two districts—Lome and Little Popo—which are separated from each other by the course of the Haho River, and extend to the mountains. The Hinterland has been so apportioned into district stations as to render any confusion as to supervision impossible. The stations are:—

Misahoehe, with Kpandu;
Atakpama;
Kete-Kratschi, with Bismarckburg;
Sokodé (formerly Paratau district);
Basari; and
Sansanne-Mangu.

The Franco-German Delimitation Commission have completed their labours as far as Kirikri.

A large capitalist has been accorded permission to prospect for minerals, and the work will commence shortly.

Buildings. Work has been chiefly confined to Lome, where the warehouse for building materials and stores has been completed, as also the machine and sawmill sheds. The Governor's temporary residence has been enlarged and his permanent house has been commenced. The Wolff memorial has been erected. The price of building materials has risen considerably. The water supply has been much improved, and wells have been dug before the house of each official.

Justice. It has been found that considerable latitude must be left to the local officers in judging native cases, and this system has worked well, while in many districts, more especially in the interior, many decisions are left to the Chief's Court, provided always that justice is impartially administered and that all parties accept the Native Tribunal. In the event of a Chief's decision being overruled by the German official, the former can appeal to the Governor if he disapproves of the grounds on which his verdict was set aside.

Hospitals. 55 Europeans were treated in the Nachtigall Hospital at Little Popo, of whom 40 were cured, 7 improved, 5 were sent home as unsuited to a tropical life, and 3 died. Of the patients, 26 were from Togoland, 25 from Dahomey, 1 from Quittah, and 1 from a steamer. Only 9 patients—chiefly boys—were treated in the native hospital in Little Popo, but in Lome 36 native cases of ordinary African illnesses were taken in. There were also 3 cases of leprosy, which was checked by isolation, 2 cases of small-pox, similarly checked. There were two cases of black-water

fever and 34 successfully treated cases of malaria among Europeans.

Products. The firm of Chevalier in Kete-Kratschi has succeeded in putting Landolphia rubber on the market in such a condition as to prove that this rubber is of exceptional value. Further, in the Tapa district, the tree called *Kikxia elastica Preuss* is shown to give the best rubber, whilst in the same forest region kola-nut trees have been found in quantities far beyond expectation, and plantations started, although the first trees from Cameroon failed, thanks to bad packing and to want of care on the journey. The Sholto Douglas and Cole plantations are progressing satisfactorily. The coffee crop promised well. The *Manihot Glaziovii* indiarubber trees which suffered much from drought at first, have made good growth thanks to the heavy rains. Oil-palms yielded an unusually heavy crop.

Districts.

Districts. Lome. The state of health of the district of Lome is unsatisfactory, chiefly on account of the bad water supply, and travellers have to carry water with them until they have crossed the barren ill-watered region. Drainage is almost unknown except in Lome itself. There are three cocoa-nut plantations, which are all in the hands of blacks. Market days are especially busy at Lome, but there is a largely-attended market every day; there are also other markets in the district. Labour is plentiful, but not very cheap, as the demand is large. The principal industries are a sort of pottery (coarse jars chiefly), manufactured for the most part in Bolu; mat making in Agueve, and weaving generally in the district, but more especially in the Adaklu and Abutia regions, where a bright-coloured cloth is made which has a ready sale even across the Volta and far into the Gold Coast Colony. The roads are at present little better than local paths, but much care has been spent on them of late, and the natives have been encouraged to construct them for themselves. Efforts have been made to give the native Chiefs more position and influence among the people, in order that they may further Government projects.

Little Popo. There has been much improvement in the nature of the houses built in Little Popo, and the new Roman Catholic church is a great feature. The coffee, cocoanut, and indiarubber plantations have all given satisfactory results, but an effort to grow tobacco near the coast has proved a failure.

Misahoehe and Kpandu. Misahoehe and Kpandu continue to prosper, and offer a superior climate to the coast districts. A new station named Botoku is being prepared. Weaving, basket and mat making, and iron-work—the latter chiefly at Buem, but also in all the large villages—are the chief industries. Carrier's hire from Misahoehe has diminished from 8 to 7 marks to Kratschi, and from 5 to 4 marks to Lome. The station at Kpandu is almost completed.

Atakpame Station. Atakpame Station has developed largely, and the town,

formerly almost in ruins, now contains about 2,000 huts; the inhabitants are all agriculturists, and are generally absent on the land. It is the chief town of the Axa country. The products at present only consist of food-stuffs, but satisfactory experiments are being made with *coffea arabica*, *calophyllum inophyllum*, and *Averrhoa carambota*. Cattle are bred in the district, and are used for draught, but are also sent down to the coast for food. The market established at Atakpame attracts the sellers of indiarubber, and last year about 50 tons were sent down to the coast. Since the establishment of the station a very frequented caravan route has been opened from Tschautscho to Lome and Little Popo viâ Atakpame, which has much shortened the journey. Good and frequented roads issue on all sides from the station, and security reigns where robbery and murder once ruled supreme, so that it becomes daily a more chosen caravan route to the coast.

Kete-Kratschi.

The climate of Kete-Kratschi is bad for Europeans, and the water supply is very bad, whilst leprosy is very common. The indiarubber plant is plentiful, and excellent specimens of *Kikxia elastica Preuss* have been grown, which have been most favourably reported upon at Hamburg. It is stated that the native population has not changed much in numbers, but it is added that large numbers of the native Mahommedans have left Kete and gone back to their old "El Dorado," Salaga. The nursery plantations in Kratschi are making special experiments with four plants:—

(*a*) Caoutchouc trees (*Manihot Glaziovii*), with results which would seem to show that Europeans cannot grow it at a profit, though native growers might do so.

(*b*) Coffee. The Arabian sample prospered at first, but had to contend with a noxious bettle, about 15 millims. long (not *Herpetophyas fasciatus*), that bored holes in the young trees. Moreover, a portion of the coffee beans dried on the stalk before maturing.

(*c*) Kola trees have made excellent progress.

(*d*) Date palms sown from seed sent from Cairo in August, 1898, came up splendidly, and were transplanted in May, 1899; they at first threatened to all die off, but have for the most part recovered; the experience would seem to show that the seed should be sown where the tree is intended to stand. Other trees and plants that have been tried and have done well are the mango tree, akee tree (*Blighia sapia Koen*), *Albizzia Lebbek*, *Erythrine indica*, *Acacia Farnesiana*, *Acacia alata*, *Cæsalpinia Sappan*, *Calophyllum Inophyllum*, silk-cocoon tree, oil palm trees, *Psidium Guajava L.*, *Anona Muricata L.*, pineapple, various specimens of the banana, sugar-cane (does better on stronger soil), and bamboos.

Sokodé and Basari.

Tobacco and cotton are among the indigenous plants of the district of Sokodé and Basari. Cattle rearing is carried on to a considerable extent, which could be increased, but at present the district does not produce much more than is needed for home con-

sumption. A small strong stamp of horse is bred in Basari and Tschautscho, but for riding purposes larger horses are imported from Borgu, Gurma, and the Haussa States, though many of these die in the rainy season. Donkeys are also imported from the north.

Sansanne Mangu.

Peace has only been disturbed in Sansanne Mangu by a Konkomba raid on a cattle caravan going to Kete-Kratschi for the Government; by the revolt of a portion of the northern Mobas; and, finally, by the fact that it was found necessary to include the Barba country in the district by force. The Barbas are a tribe of horsemen about 1,000 strong. An expedition against them was carried successfully through in November and December, 1898, and resulted not only in the subjection of the Barbas, but also in the re-opening up of the old Haussa caravan route from Nago-Kauri and Kwande straight through Barba. The market of Mangu has in the past year become a trade centre for the whole district, and has attracted all the trade of the important centres, such as Naluri and Moba, as well as much of the trade of the Dagomba and Salaga to Mangu, so that as many as from 4,000 to 5,000 traders are present in the market at the best seasons of the year. Large sheds and cattle stalls have been built to meet the requirements of the market, and 110 large houses constructed, but they do not nearly suffice; a small charge is made for the accommodation. Trade has been considerably disturbed by the flooding of the Oti, which has rendered certain roads between Mangu and Basari impassable. The want of proper building materials is much felt, and an experiment is now being made to roof the larger houses with hard sun-baked earth instead of with straw, which has many palpable inconveniences. The floods round the town are also a great source of trouble. The tobacco cultivation more than meets the wants of the people, and the leaf is exported in considerable quantities; the quality is said to be the best in the colony. The cattle breeding might be much improved by crossing the Mangu cattle with the Haussa cattle. Mangu carriers have now been right down to the coast.

Scientific undertakings.

The exact amount of progress made in the scientific exploration of the colony is not as yet known, as no reports have been published. Dr. Gruener and Lieutenant Thierry were busy at Sansanne Mangu and Paratau respectively; the maintenance of these advanced posts, and the expeditions that have set out from them, has again necessitated a large call on the African fund. Lieutenant Thierry has returned to Germany with a rich collection of ethnological objects.

Franco-German Frontier Commission.

Dr. Rigler who was formerly a member of the Frontier Commission has taken Lieutenant Thierry's place at Paratau.

The German Commission is now under the command of Lieutenant Preil, and has advanced into the hitherto quite inaccessible Kabure country, where armed opposition on the part of the natives has had to be overcome by the French and German members of the Commission fighting side by side. No complete

reports of the geographical results of the Commission are to hand as yet.

Topography. Recent explorations of the country have led to a determination to issue a revised edition of the Sprigade map of Southern Togoland, but it cannot appear for a year or two.

Cameroons.

Population. The total white population of the colony in 1898–99 was 425, or 101 more than in the previous year: of these 60 were officials, 39 constabulary, 108 traders, 60 missionaries, 52 planters and gardeners, 3 seamen, 13 engineers, 12 carpenters and masons, 8 doctors, 8 hospital nurses, 4 explorers, 28 married women, 11 nuns, 4 female teachers, and 15 children. Of the above, 348 were Germans, 36 English, 9 Swedes, 13 Americans, 14 Swiss, 1 Belgian, 1 Russian, 1 Portuguese, and 2 Austrians. There were 22 deaths.

Meat supply. The increase of cattle in the Government stations has made great strides, especially at Buea, where there is a herd consisting of two bulls and 10 cows that have produced seven calves. Ten more head of cattle are expected, and it is hoped that the breed may be improved by judicious crossing, and that good milch cows may be reared.

Edea and Johann Albrecht's Höhe have also increased their herds, and fresh meat may now be had at least once a week in Victoria. Vegetables are being grown but are still scarce, since, although all sorts of European vegetables thrive at Buea, its distance from the coast makes transport difficult.

Plantations. The general progress in plantations has been most satisfactory, and much activity has been displayed. The cacao cultivation has succeeded admirably, but that of coffee has had to be abandoned because the trees are attacked in their roots by a beetle that has destroyed all the trees except those in a plantation of about 150 acres situated on the higher mountain slopes. At the present moment all the southern and western slopes of the mountains are studded with plantations, on which about 4,000 labourers are employed as against 2,000 last year—3,000 of these are natives of the Colony. About 150 labourers were imported from Togoland by State aid, and a hope is expressed that labourers from that Colony will by degrees take the place of the Liberian labour which has had to be imported hitherto. The labour question remains an important one. more especially in view of the late troubles in the Rio del Rey district, since the increased requirements of the plantations will demand at least 6,000 labourers for the present season. The cacao plantations produced a crop of the value of about 15,600*l.* in 1898–99, and it is expected that this will be largely increased, although the amount is already over 9,000*l.* more than the value of the crop brought to market in 1895–96.

Besides the plantations in the Cameroon Mountain regions, others have been started in various other parts of the colony, namely, near Campo, on the south of the Sanaga, between

Mundane and Johann Albrecht's Höhe, and in the Rio del Rey district. Cacao is the chief product, but *Kikxia Africana Preuss*, and tobacco threaten to become serious rivals, and are reported to be doing remarkably well.

Schools. The school children numbered 197 in the two Government schools of Victoria and Cameroon—81 in the former, and 116 in the latter.

Missions. The Basle Mission consisted on June 30 last of 21 ordained missionaries, 5 unordained, 12 wives of missionaries, and 1 hospital nurse. There were 9 chief stations, with 129 district stations, and 133 schools, with 145 native teachers. There were 2,030 mission members, and 3,278 pupils.

The Baptist Mission has 52 stations, served by 3 missionaries. The pupils number from 30 to 40, and there were 68 baptisms during the past year, but also about 30 secessions.

The American Presbyterian Mission in Gross Batanga numbered 12 missionaries and 10 women. There are 4 Mission stations, 748 communicants, 645 Sunday-school pupils, and about 430 day pupils.

Roman Catholic Mission: A new church was opened at Cameroon, where the newly-established school has about 100 pupils. Schools have also been built at Marienberg. The number of pupils in the various schools has considerably increased, and the general work of the Mission is reported as being very satisfactory.

Trade. The trade report for last year gives an increase of 3 trading firms, bringing the total up to 19 in all, of which 11 are German and 8 English. The chief articles of export were palm oil, palm nuts, indiarubber, copal, ivory, ebony, cacao, and kola nuts. The tobacco trade has quite disappeared. The value of the exports amounted to about 257,290*l.*, as against 196,000*l.* in the previous year, or an increase of 61,290*l.* for the year ending June 30, 1899, the chief increase being in the sale of indiarubber, palm nuts, and ivory. The once-flourishing coffee export—1,633 kilos. in 1897–98—has dropped to 390 kilos. Imports show an increase to the value of 175,000*l.*

Shipping. 24 German, 34 British, and 8 Spanish steamers visited Cameroon. As in former years, communications with Europe were carried by the Woermann line, the British and African Steamship Company, and the African Steamship Company.

The above-mentioned lines perform a monthly service, and carry the mails.

Post. 110,460 letters were sent and received; 3,276 parcels, 53 letters containing valuables, 2,367 money orders, and 758 telegrams were exchanged.

Revenue. The revenue of the Protectorate for the year ending June 30, 1899, amounted to 62,560*l.*, of which the customs produced 51,560*l.*, licences, 1,600*l.*, and the sale of land, 3,750*l.*, as against 34,875*l.* in all for the previous year.

Expeditions. As regards expeditions, the most important was the successful Adamaua expedition under Captain von Kamptz. After Ngila, the long-standing enemy of Germany, but more especially of the Yaúnde

station, had been overthrown, with scarcely a show of resistance, the expedition marched on victoriously by way of Yoko to Tibati, where the Lamido was eventually captured, and the city taken without fighting. This result has placed all Southern Adamaua in German hands, and has proved that the Fulla Chiefs, of whom the Lamido was said to be the most powerful and most warlike, are no match for 300 or 400 native troops, drilled and officered by Europeans. This has been shown by the fact that a peace mission to Ngaundere returned to Yoko with an assurance of the former place's submission. It is contended that the expedition has resulted in the opening up of the road to Garua, the trade advantages of which are evident. The country in the neighbourhood of the Cross River Rapids has been made secure by the establishment of a station, and it is thought that the Rio del Rey district will recover a large portion of the trade which has been diverted to Old Calabar. The expedition under the ill-fated Dr. Plehn into the Sanga–Ngoko–Yaúnde district, in the south-east of the Protectorate, is represented as having been successful in its results, but since the report was written the leader has been murdered.

Roads.

The Victoria–Buea road has reached Mebio, and is expected to be completed next summer. A road has been commenced from Victoria to Bomiadikombo and the Moliwe plantation, and the completed Buea–Molyko road will be continued to Tito as soon as the Victoria road is finished.

General summary.

It is evident that the Cameroons Protectorate is making steady progress. The Adamaua expedition, the advance of the occupation of the north-west frontier, and the occupation of the South Cameroons has nearly doubled the area of the country actively ruled over. The returns from the plantations have more than come up to expectations, and the trade of the south and north coasts, as well as that of the Cameroons River district, has steadily extended itself.

Protectorate troops.

The demand for the increase of the troops by 100 men has been granted by the Reichstag, and the force will now consist of two companies of 250 natives each, with European officers. The black soldiers have hitherto been recruited from Sierra Leone, from Liberia, from the Youba tribe in the Lagos Hinterland, and from the Haussas. The latter are the best, and are well suited to become non-commissioned officers, being intelligent, orderly, and strictly honest. Lately, recruiting has been carried on in the Protectorate itself, and the Yaúnde people are represented as affording excellent material, both by reason of their endurance and of their courage. Private soldiers receive 1*l.* 10*s.* a-month pay, and non-commissioned officers up to 4*l.* The existence of the famous Rabbeh, who is said to have his headquarters at Dikoa, in the northern portion of the Protectorate, is considered a standing menace to the security of the colony, and an urgent reason why the Protectorate troops must be put on a strong footing. Rabbeh's defeat by the French will thrust him back into the German Protectorate. In addition to the above referred to increase of the Protectorate troops, a sum of 43,265*l.* is included in the Supple-

mentary Credits laid before the Bundesrath on behalf of the Cameroons Protectorate. This sum is to be devoted to a further augmentation of the native troops to 750 men, plus an artillery company of 50 men, with a reserve of 100 men. A station is also to be established at Garua, and an expedition is to be sent into the Benué district for the purpose of upholding German supremacy in the newly-acquired regions.

Slavery. Slavery has entirely disappeared in all the region immediately under German control, and it is stated that not a single case of the sale or purchase of a slave from the interior of the Cameroons littoral has been noted between 1895 and 1899.

The Government will not be able to entirely suppress the slave trade in the remote interior until the country has been subjugated.

North-West Cameroons Company. On July 31, 1899, a land concession of considerable dimensions was granted to a society which proposes to trade under the designation "North-West Cameroons Company."

The tract of country conceded to the society is bounded as follows:—

On the south by the River Sannaga; on the east by a line drawn from the intersection of the Sannaga with the 12th degree east in a north-north-easterly direction past Kontscha to the 8th parallel; on the north by the 8th parallel; on the north-west by the Anglo-German boundary; and on the west by a line drawn from the point at which the Cross River touches the boundary of the Protectorate, and continuing in a south-easterly direction, to the confluence of the Sannaga and the Mbam.

The concession confers on the company proprietary rights over all the Crown lands acquired in the above-mentioned district—about 50,000 acres in extent—for a period of 50 years, to be prolonged to 60 years in the event of the company constructing a railway to the coast within the next 12 years.

The objects of the company are described as the acquisition of real estate and the agricultural and commercial development of the districts conceded.

Certain conditions are attached to the granting of the concession, such as a surrender to the Protectorate Administration of any lands that may be required for Government purposes, as for railways, schools, churches, and the like; the toleration of private enterprise within the area ceded, so far as the company's rights are not impaired; and freedom of commerce generally.

The company has been granted permission to fell trees, with the restriction that 25 per cent. must be spared.

The company possesses a capital of 200,000*l.* in 10,000 20*l.* shares. These shares are paid for in full, and are described as Series A. The company will also issue shares for which no payment will be required, and which will be known as Series B.

The company is called upon to devote a minimum annual sum of 15,000*l.*, to amount in 10 years' time to 150,000*l.*, to the development of the area ceded, and the annual accounts are to be submitted to the Colonial Department of the German Foreign

Office. The company must further subscribe a single sum of 5,000*l.* towards the cost of the proposed expedition to Garua, and a percentage of the net profits is to be paid over to the Administration of the Protectorate.

The company has set to work energetically on the preliminary operations connected with the working of the concession. Captain Ramsey, formerly a member of the Colonial Constabulary force, has been given full powers to act as the company's representative: he is to establish three stations at Rio del Rey, the Ndianz Falls, and at the Cross River Rapids. The salt mines near the latter place are expected to prove one of the most valuable of their possessions.

The factory belonging to the firm Westphal and Stavenow, at Cameroon City, has been purchased, and small steamboats are to be placed on the river, to connect Rio del Rey with Cameroon City.

A plan for the construction of a field railway from Ndianz to the Cross River is under consideration, and it is proposed to increase the capital of the company from 200,000*l.* to 500,000*l.*

Geology. Dr. Esch has returned to Germany with a rich collection of geological specimens found in the Protectorate. The result of his researches will be published eventually.

Franco-German frontier. With the establishment of a Government station at Ngoko by Dr. Plehn the first topographical point in that region has been settled. The difficulties which beset the original endeavours to fix the Franco-German frontier, and the fact that the southern boundary of the Protectorate was marked by a parallel of which the numerical value is as yet by no means established (the point of intersection of the 10th degree of east longitude with the River Campo not having yet been ascertained, nor the proper degree of latitude discovered), make it desirable that a Special Mixed Commission should be named for the purpose of arriving at the exact geographical position of the points at issue, and to delimitate the frontier in the Campo and Ngoko districts. Negotiations with France relative to this question have as yet had no result. The climate and the impenetrable nature of great parts of the primeval forests in these regions will render the labours of such a Commission especially hard, so that it will only be possible to establish the positions of the most important points, and it will be by no means feasible to delimitate the southern frontier throughout its entire length.

Topography. The plantation district in the southern and western corner of the Protectorate has been surveyed by Captain von Besser sufficiently accurately, although he was not provided with all the latest modern appliances, and maps have been issued for the use of the planters.

Herr Conrau (since killed) has been busy with a successful topographical survey of the unknown region between Bali and Wuri.

South-West Africa.

Population. The white population consisted on January 1, 1899, of 2,873 souls (men, women, and children). Of these, 1,879 were Germans, 173 English, 419 from the Cape, 79 from various countries, and 323 Transvaal Boers. Of the Germans, 776 were officials or soldiers, 123 traders, 34 missionaries, 112 settlers, and 505 labourers. No census of the native population can at present be taken on account of the nomadic habits of the natives. The numbers of the native tribes in the Herero district and Namaland have been much diminished by sickness and poverty. The death of Manasse, the Chief of Omaruru, was a serious loss for the Protectorate, but his successor, Michael, appears to answer the expectations formed of him. Only one insignificant case of resistance to the authority of the Government occurred, in connection with the execution of the Regulation relative to the marking of guns, but the Chiefs concerned, Paul Fredricks, of Bethanien, and Willem Christian, of Bondelzwart, were easily brought to reason and punished.

Climate and health. The season was favourably wet. Malaria is the prevailing malady, and is more malignant in the northern parts of the Protectorate than in the south. There were no general epidemics, and the season showed a decided decrease in illness, but it is, nevertheless, believed that the deaths exceed the births among the natives, who are still suffering from poverty resulting from the rinderpest.

Hospitals. Formerly all fever cases in the north, east, and coast districts had to be sent to Windhoek, but now lazarettos have been established at Outjo, Keetmannshoop, and Swakopmund, and in these and several other places dispensaries and field hospitals have been organised. Special attention has been paid to the water question.

Rinderpest. Two years of immunity from rinderpest have begun to give breeders fresh courage, and only one single outbreak in Omaruru, which was quickly stamped out, served to prove that cattle inoculated after the Koch system were immune, since no inoculated cattle were attacked. Namaland was kept quite free of the disease, owing to the energetic isolation measures taken by the local authorities, and to immediate inoculation.

Trade. The value of the imports amounted to about 293,400*l.*, as against 244,300*l.* in the preceding year, or an increase of nearly 50,000*l.* The exports amounted to about 45,790*l.* in value, as against 62,330*l.* last year, or a decrease of about 16,500*l.* The falling-off in the export trade is attributed in a large measure to continual heavy weather at sea, which greatly interfered with the export of guano from Cape Cross. The duties on imports and exports combined produced 1,700*l.* less than the previous year, in spite of the fact that the duties on imports gave an increase of 2,000*l.* The decrease of 3,700*l.* on the duties on exports is said to have been due to the above referred to interference in the guano trade, to the fact that the export duty on guano has

been reduced from 35 marks to 22 marks 50 pf. per ton, and to the dislocation of the land communications in consequence of the precautions taken against rinderpest contagion. Guano is the chief article exported, but the indiarubber trade shows a satisfactory upward tendency.

Irrigation. Numerous irrigation works, notably on the Voigtland and "Hoffnung" farms, near Windhoek, have been executed, and the Government have now commenced the construction, at a contracted cost of 3,000*l.*, of a dam at a spot about 35 kiloms. from Windhoek, which is intended to shut up a valley basin and regulate the distribution of the rain-water, which at present can only reach the plain through a channel in the rock about three-quarters of a metre wide. It is calculated that 8,000,000 cubic metres of water will be thereby stored.

Agriculture. Agriculture properly speaking cannot be said to be very flourishing in the Protectorate, but a specialist has been secured from the Cape Colony Agricultural Department, and it is hoped that by analysing the soil, and advising the farmers, he may bring about some improvement in the agricultural conditions of the country at an early date. Three new nursery gardens in the Keetmannshoop district have been added to those already existing: two are Government property, and the third is private.

Cattle. While the Herero is patiently endeavouring to repair the ravages of the rinderpest, the whites are seeking to improve the breed of cattle by the importation of foreign bulls and cows. In this enterprise they are supported by the Government, and for the purpose special attention has been paid to Namaland, of which country the cattle are in every way superior to those reared in Damaraland. The imported bulls are put at the disposal of breeders at a small fee, and cows have been sold at nominal rates to those most severely tried by the cattle plague. A wet season has, as a general rule, given most satisfactory results, although in some cases the imported cattle have been severely tried by the change of climate. The cattle having recently suffered considerably from a contagious lung complaint, a bacteriological institution has been established at Gamans, near Windhoek, with a view to finding a means of combating the evil. In order to prevent the exportation of cattle as far as was possible, an Ordinance was issued on October 20, 1898, putting a duty of from 60 to 20 marks on the export of each head of cattle or sheep. This measure was found to be necessary because dealers were entering the colony from the east and from the south for the purpose of purchasing cattle, whilst, in addition, a certain number of the immigrants from Cape Colony were meditating a return to their own country, with their herds, in the expectation of doing a good business by their sale across the frontier.

Horses. The experiences of Cape Colony having shown that Trakehnen horses give good results, and are suitable for crossing with the native breeds, the Government imported two young stallions of this breed: one died on the way out, but the other has thrived and has got about 30 promising foals. Horses, mules, and donkeys

imported from the Argentine for the use of the Protectorate troops have done well. About 6 per cent. of the Government horses died of a disease called "sterbe," prevalent only in February, March, and April, and thought to be due to some influence of the early morning dew; some places are quite free from the disease.

Sheep and goats. The country is suitable, especially Namaland, for sheep, and the imported breeds have done well, but have given better results when kept pure than when crossed with the native breeds. Angora goats thrive very satisfactorily.

Pigs. The Berkshire pigs imported by the Government have done very well indeed, and are now being spread over the Protectorate generally.

Turkey and ostrich rearing is still in the experimental stage.

Swakopmund-Windhoek Railway. The latest reports relative to the progress of the Swakopmund–Windhoek Railway line state that it is being continued beyond Dorstrivier (130 kiloms. from the coast) towards Karibib, and that it was expected that it would reach the 150th kilom. in December, and Karibib in the spring. From there to Windhoek is 200 kiloms., and it is estimated that at the present rate of progression, namely, 5½ kiloms. a month, for the permanent way, Windhoek will not be reached for another three years, but a hope is expressed that when the difficulties that have hitherto impeded work on the line have been overcome, the rate of progress may be accelerated. Already two trains a day run on the completed portion, and the traffic is such as to encourage the belief that the line will be remunerative.

Roads. Work was steadily continued on the Keetmannshoop–Luederitzburg road, and it is expected that the road will be finished by next June. In the Gibeon district a commencement has been made on the road communication with Windhoek.

Posts and telegraphs. The opening of telegraphic communication between the colony and Germany is the chief event of the past year. The number of post-offices has been increased by three, and the postal intercourse greatly improved. The postal communications are carried out by the Woermann Hamburg Cape steamers once a month and by the mail steamer "Leutwein" that runs every four weeks between the colony and the Cape in connection with the British mail lines; whilst it has been found possible to establish regular postal communications with the interior since the "rinderpest" has been stamped out.

435,045 letters were sent or received, 2,232 postal parcels and 7,974 postal money orders were exchanged.

Companies. The South-West Africa Company have improved their landing stage at Luederitzbucht, set up a steam crane, established a branch at Kubub, sunk a well at Aus, and worked at the general development of their agricultural and garden resources. They are the most important horse-breeders next to the Government, and have added by importation to their cattle-rearing farms. Other pioneer companies have made satisfactory headway.

The Bacteriological Institution at Gamans, near Windhoek, serves both veterinary and medical purposes. Its chief object is to combat the aforementioned lung disease among cattle. The vaccination lymph imported from Cape Colony having been found to have lost some of its strength on the journey, a lymph has been manufactured which has not only reduced the number of fatal cases to 5 per cent. of the animals attacked, but has apparently secured immunity for inoculated cattle. Bacteriological Institution at Gamans.

The complement of white troops was made up of 27 officers, seven doctors, one veterinary surgeon, and 710 non-commissioned officers and men. 414 reliefs came to the colony from Germany, and of the 350 time-expired men about 115 remained in the Protectorate as settlers. No military expedition was undertaken, and only the Epukiro detachment had to take up arms to punish a marauding Herero band. Protectorate troops.

At the military stud 189 foals were born, and the depôt was able to hand over 70 horses to the troops, which actually possess 1,162 horses, and 220 foals, besides 350 mules and 1,050 draught and riding oxen. Military stud.

The first year of the newly-established system for measuring the rainfall, which is of such immense importance for the agricultural development of the country, has not produced entirely satisfactory results. Owing to the very incomplete means of communication in the interior, several stations received their rain-gauges too late to enable them to closely observe the rainy season, from October to May, and for the same reason it was impossible to transmit the observations to the central office at Windhoek as speedily as was necessary. Rainfall.

The Frontier Commission which began work in November, 1898, for the purpose of delimitating the Anglo-German boundary north of the Orange River, and determining the position of the 20th degree east has worked very actively during the past year. On account of the configuration of the country and the unfavourable water conditions, it was found necessary to survey for triangulation far to the west of 20 degrees east into German territory. The hundred points established on this chain to Keetmannshoop, Gibeon, and Gobabis will serve as points of departure for any later surveys in the Protectorate. The Commission was at Amimus in August last, and hoped to reach Gibeon in September; from there on the trigonometrical chain will be carried over Marienthal, Kalkfontein, Numib, Hoagousgeis, Noasanabis, Aais, and Lehmwater to Gobabis, and thence to Olifantskloof and Middle Rietfontein. A measured base will be surveyed for at Gobabis. The actual delimitation will then be made on the triangulation, so that the work will probably not be completed before the spring of 1901. Anglo-German frontier.

German East Africa.

The European population of German East Africa is given at 1,090, which is a considerable increase on the previous year. Of Population.

these, 884 are Germans, of whom 241 are civil officials; 172 military; 199 belong to the Missions; 272 are merchants, planters, traders, or labourers; and 168 women and children. The latest official estimates put the native population at about 6,000,000, and it is added that the number of Arabs and Indians resident in the Protectorate has not changed appreciably since last year.

Public health. Prolonged drought and large locust swarms produced famine, and had a prejudicial effect upon the health of the natives. In spite of all the efforts of the Government and private individuals to relieve the distress, the famine was spread over such a large area that the assistance given was but a drop in the ocean, and numbers of the natives died from hunger, or from eating unsuitable food.

Small-pox was also rife throughout the Protectorate, and made many victims, although the natives for the most part have now perfect confidence in vaccination, only few tribes remaining that still profess to see in it a charm by which the Europeans seek to compass their destruction. Fresh animal lymph is imported on every ship, and distributed among the coast stations. Attempts to forward it inland have failed, on account of the lymph getting spoilt by the great heat. Vaccination has consequently to be carried into the interior by inoculation from arm to arm on the bearers, and in this manner has been taken right into the Lakes district, where vast numbers have been vaccinated.

Hospitals. The European hospital in Dar-es-Salaam has been completed by the addition of isolation barracks, a laboratory, &c. 207 patients were treated during the past year, 5 of whom succumbed; 93 Europeans were treated in the temporary hospital at Tanga, and 2 of them died.

A bath-house has been established at Aboni, on the River Sigi, where there is a sulphur spring, of which the waters have much the same qualities as those of Aix-la-Chapelle. Natives have derived much benefit from their use, and another bath is now in course of construction there for Europeans.

Plantations. The Government Agave fibre plantations at Kurazini has been very busy and considerable additions to the machinery necessary for the preparation of the fibre have been made. The new machines are imported from Mauritius, and give every satisfaction. The plantation now has 50 acres of fully planted land, and 180,000 young plants in the seed-beds. The number of labourers employed has been doubled. Up to August 1, 1899, 182½ cwts. of fibre were sent out. A plan for a field railway is in course of elaboration.

The experimental plantation at Mohorro has had to contend with very adverse circumstances. A soaking wet season was followed by an abnormally dry one, which made it impossible to do much with the tobacco, and the last season was again so dry that it was found out of the question to prepare all the fields set apart for the tobacco culture. The experiments with vanilla have proved a failure, and it is thought that it would be useless to make further attempts to grow it in Mohorro. Vanilla has done

rather better at Kitopeni and Chambisi, though great losses have been incurred through the prolonged rainless season. Opium has also, so far, not been successful, but the cultivation of this plant has been commenced so recently that it is too soon to give a final opinion. The attempt to grow indigo has been more successful, and the harvest could be gathered three months and a-half after sowing. The preparation of the plant as a colouring substance was entrusted to Chinese, and a good rich blue was procured. The rest of the land was sown with rice, maize, mtama, sesame, and other similar seeds, but the great drought necessitated repeated sowings. The coffee plantations have given very satisfactory results, and it has also been shown that tea will do well on the soil. European fruit trees succeeded fairly well, in spite of the protracted drought. It is probable that the attempt to grow European cereals will give place to the culture of fodder for cattle and horses.

Cattle.

The great drought has made it impossible to arrive at any conclusion as to the breeding results, since all but the best cows have had to be disposed of. The amount of milk given still averages 1½ litres per diem for native cattle.

Sheep and goats have done well, with the exception of the Angora goat, which does not thrive. Pigs have increased enormously, and their stock seems very promising.

Imported cattle and sheep did badly at first at Kwai, but those left seem to have become acclimatised, and the stock produced seems healthy and strong. Two of the imported bulls have been set apart for crossing with the native cattle.

Donkey breeding with the Muscat and native donkey crossed has been so successful at Dar-es-Salaam that the example has been copied at Kilwa, Tabora, Kilimatinde, and elsewhere.

Native cattle-rearing has been attended with such good results in the districts south of Lake Victoria that the stock is now almost as large as it was before the rinderpest outbreak.

Forests.

Government orders have been issued regulating the felling of forest trees, with most advantageous results, both because traders can, in consequence, be supplied with greater regularity, and because the forests will thus be preserved from ruthless and total destruction.

Flotilla.

The "Max" has had to be taken out of service on account of old age. The new Government steamer, "Kaiser Wilhelm II," arrived at Dar-es-Salaam on September 2, 1898. The "Hermann von Wissmann" does a good trade in passengers and goods on Lake Nyasa. The new aluminium pinnace for Lake Victoria Nyanza arrived in June, 1898, and was at once sent forward by bearers.

Post and telegraph.

Postal communication with Europe is maintained by the fortnightly German East Africa line, by the monthly English mail-steamer, and the monthly French mail-steamer touching at Zanzibar. The coast service is performed by a branch of the German East Africa line. 467,294 letters were sent and received; 5,340 postal parcels; 14,953 postal money-orders; and 21,366 telegrams.

Roads. The poverty prevalent during the past season made it easier than usual to procure labour for the roads, all of which from the sea to the Lakes district are now in excellent order and have properly appointed rest stations and provender stores at stated distances.

Buildings. In Dar-es-Salaam and most of the coast towns the construction of court houses, hospitals, prisons, and other public buildings has been completed.

Finances. The house and hut tax, in spite of the distress which existed in many districts, yielded more than treble the 5,000*l.* estimated The combined export and import duties are returned as having produced 80,000*l.* in 1898, an increase of about 1,30,000 rs. on the import trade, with a diminution of 48,500 rs. on the export trade, said to be largely due to the falling-off in the ivory trade, which has been diverted through the Congo State or by way of Mombasa. It is feared that the latter railway communication will draw off all the Central African trade from the German Protectorate, unless countervailing measures are speedily adopted. At the present moment, it is said, transport from Tanga to Moschi is half as cheap and takes half the time by Mombasa that it does by the direct route through German territory.

Stations. *Tanga.*—The European population has increased by six persons, from 146 to 152. The native population has been reduced by famine to half its numbers, from 123,308 to 61,328. It was found that the natives, in spite of the famine, would not work, and the plantations again suffered from scarcity of labour, whilst want of rain has caused the locust swarms to flourish.

Tanga–Muhesa Railway. The Tanga–Muhesa Railway despatched two or three trains each way every week, but the rolling stock is greatly in want of repair.

In Pangani the German East Africa Company have abandoned the cultivation of coffee at Kikogwe, but have made extensive plantings and sowings of the sisal fibre plant, which does well. Progress is being made on the Pangani Company's sugar refinery.

Bagamoyo has been increased in area by receiving about half the former station of Saadani. The native population has been largely reduced by famine. The harvest was almost nil by reason of the drought.

Gold. Gold has been found at various places in the Tabora district during last year, namely:—

(1) In the Mgombata Mountains, north-west of Msalalla;

(2) In the brooks of the Kiriri Hills near Java Ussongo, in the north-east of the district; and

(3) In the Kiniatupi stream in the north-east.

The first is supposed to be the richest find, but no steps have as yet been taken to work it. Traces of the precious metal have also been found on the eastern shore of Lake Victoria Nyanza as well as in other parts of the Nserugururra Mountains.

Wild animals. Elephants have quite disappeared from the Tabora district, but hippopotami, lions, leopards, and every species of antelope abound. Ivory is procured in small quantities in the Schirati

Hinterland from the Masai steppes, but all the large elephant herds are to be found in British territory.

The native population of Bukoba is estimated at about 180,000. The cultivation is rich, the chief products being bananas, maize, European wheat, rice, eleusine, manioc, yams, patates, sugar-cane, cotton, tobacco, and hemp. Bukoba.

The various Christian missions established in German East Africa have done good work during the past year; the number of natives baptised has increased, and the members of the missions have rendered good service in assisting in the relief of the famine-stricken people. The example set in the Mission plantations has also done much to encourage agricultural activity. Missions.

On April 1, 1898, the strength of the troops amounted to 2,078 men, of whom 444 were employed in the constabulary. On April 1, 1899, their numbers had been increased to 2,145, of whom 451 were employed in the constabulary. 111 askaris were given their discharge, and it was found difficult at times to replace them. The death of Quawa on July 19, 1898, put an end to the Uhehe insurrection. While the old Chief lived his influence sufficed to keep alive the spirit of rebellion, although he was quite powerless. The 3rd Company, at that time stationed in the district, was thereupon withdrawn to Lindi, and on their way thither inflicted condign punishment on marauding Wapagoro that had attacked the Roman Catholic Mission in Issango in the middle of 1898. The Dar-es-Salaam Company marched against and reduced a rebel outbreak of Matumbi Mountains people in September, 1898. The Pangani Company was for the most part disbanded and sent to form a company at Bukoba, where a detachment of troops recruited from the district was stationed; their chief duty was to guard the frontier during the troubles in Uganda. The Ujiji Company was sent to protect the Congo-German East African frontier. A post was established at Usambura, at the north end of Lake Tanganyika, and the Congo troops, which had been completely routed by the Manyema rebels, were taken under German protection. The 6th and a part of the 10th (Tabora) Company were sent to reinforce the 9th Company, and for the purpose of defending the frontier from invasion, three askaris posts were established on the River Russisi. The Kilossa Company, by expeditions in the Uluguru Mountains, and by the construction of roads, bridges, and rest-houses, peacefully constrained the wild inhabitants to accept German rule, thus adding a promising plantation country and valuable means of communication to the resources of the Colony. Protectorate troops.

The attempt made in the previous year to introduce the use of riding and driving mules has developed largely, and already a good many soldiers have been taught to ride and drive tolerably, and have been useful in accompanying small expeditions.

Although no serious expeditions had to be undertaken, the great value of the Protectorate troops to the well-being of the colony has been once more shown in the past year, and a proof of their

good reputation in the neighbouring countries has been given by the fact that neither the Uganda nor the Congo rebels crossed the German frontier.

Meteorological observations.

After three years' labour in the Protectorate, Dr. Maurer has returned to Germany, and is at present occupied on a report of the results of his observations. It has so far been found impossible to discover any person capable of continuing the work he has commenced, and this want is much felt because the peculiarly irregular weather conditions of German East Africa render meteorological observations of special value.

Topography.

The labours of the Anglo-German Nyasa–Tanganyika Delimitation Commission, which were concluded at the end of 1898, have been of the greatest value for the topographical survey of the southern districts of the colony, since they have located a number of fixed points for the maps of this region. Great strides have been made in the survey of the country, and German East Africa bids fair to belong in a few years to the topographically best-known districts of tropical Africa.

Kiao Chao.

Administration.

The special attention of the Administration has been devoted to the agricultural development of the Protectorate. Further, great importance is attached to the independence of the local Government from the home Government, and in order to secure as sound a local administration as possible, a Council has been formed, which is composed of all the heads of the several administrative departments under the personal supervision of the Governor. To this Council have been added three members chosen from the civil population and appointed for one year; the first is named by the Governor, with the consent of the Council, the second is chosen from among the members of the non-Chinese firms, and the third from the list of tax-payers paying at least 50 dol. ground tax, without distinction of nationality. In addition to the above-described Council, the Governor is assisted by a School Committee, a Committee to settle the question of licences to public houses, another to settle the land tax, and others for pauper and Church questions. The Protectorate has developed to an unlooked-for extent under this system of administration, which has enabled all the vital questions at issue, such as legal rights, landed properties, land tax assessment, school and Church matters, to be satisfactorily settled. The shipping trade has largely increased, and commercial communications with China have been arranged by an adequate customs agreement. Finally the railway has been commenced seriously, and building operations are being undertaken on a large scale.

Land question.

The object of the Administration in dealing with the land question has been to secure for every settler the lasting possession of his plot, and by opposing unhealthy land speculation—

that is, the acquisition of large tracts of land in view of a rise in price—to offer to all a share in the increasing value of the land in the Protectorate. The land is first bought from the Chinese by the Government at its full value at the moment of the German occupation, and then sold to settlers. Would-be purchasers have been so numerous that a sum of 161,921 dol. has been realised on the sales.

Tsintau. Tsintau is, and will remain, a free port. The German Protectorate harbour has all the advantages of a Treaty port and a free port, and as such especially recommends itself as an emporium, since the merchant can there store, free of duty, his wares from abroad or his raw materials brought from the interior of China.

German-Chinese Customs Arrangement, 1899. The following are the provisions of the temporary Agreement under which a Chinese custom-house has been conceded in the German free port district. The Chinese import duties can only be levied on goods brought to Tsintau by sea when they are transported beyond the borders of the Protectorate into Chinese territory. The Chinese export duties can only be levied on goods brought from the interior of China when they are shipped from the German Protectorate to any other place. Products grown in the Protectorate, or articles manufactured from products of the Protectorate, pay no export duty, and the same applies to articles made in the Protectorate from sea-imported goods. The export duty to be paid on articles manufactured in Tsintau from materials imported from the interior of China is to be settled by a subsequent arrangement. The so-called half-duty (2½ per cent. coast duty) will be levied on Chinese wares or products introduced into Tsintau from a Chinese port and dispatched into the interior of China. Chinese wares that have paid export duty on shipment out of Tsintau enjoy the same privilege on importation into a Chinese Treaty port, on production of a certificate. European and Chinese goods shipped to Tsintau from a Chinese Treaty port are fully reimbursed the duty, in accordance with the XXVIth Article of the German-Chinese Commercial Treaty of 1861. In the same way Chinese goods that are brought to Tsintau from a Chinese Treaty port pay no duty on transhipment to any place outside China, provided that a certificate can be produced to the effect that the goods have already paid the export duty.

Only on opium is an excise duty equal to that levied by the Chinese customs levied on behalf of Germany.

Trade. The actual effect of the above arrangement cannot be accurately defined yet, as large quantities of cotton yarn and shirtings were exported over the frontier before the arrangement came into force on July 1, 1899. The keenness, however, shown to trade with the interior is a good sign of business prosperity. Chinese traders are especially busy with the import trade, and the future welfare of the Protectorate must depend largely upon the influx of good-class Chinese merchants. It is further of good omen that many old German China merchants have settled at Tsintau.

Shipping trade. From October, 1898, to September 15, 1899, 167 steamers and

9 sailing-vessels visited Tsintau, of which 113 were German. The Jebsen subsidised line runs vessels every four to six days from Shanghai, viâ Tsintau and Chefoo, to Tien-tsin and back, in connection with the large mail-steamers from Shanghai. The other lines using the port are the Butterfield and Swire Company and the "Russian Steam Navigation in the East Company."

Post and telegraph. The mails are carried by the above-mentioned subsidised line and a weekly ship of the China Navigation Company. There is a telephone wire in Tsintau. The town is in telegraphic communication with the Chinese mainland and abroad through the Chinese Imperial Telegraph Company; 428,012 letters were sent and received, 1,464 postal parcels, 3,088 postal money-orders. The letters for the interior are sent by Chinese post.

Railways. The Shantung Railway Company was formed on June 14, 1899, with its headquarters at Berlin, but it is probable that it may be removed to Tsintau. The Company has a capital of 2,700,000*l.*, of which 675,000*l.* were paid up on the formation of the Company. The Company has undertaken to build the entire line from Tsintau, viâ Weihsien, to Tsinanfu, together with a branch line to Poschan, in five years, and to complete and start running the Weihsien section in three years. The entire length of the line is about 450 kiloms., or about 280 miles, and the Weihsien section 180 kiloms., or 112½ miles. The line will be a single one, with a gauge of 1·435 metres, but the foundations will be laid wide enough for a second line to be added.

The Company has undertaken to pay a tribute, which is to increase in proportion as the annual dividends rise above 5 per cent., to the Government for the support of the harbour works and the administration of the Protectorate. The Imperial Government has, moreover, the power, at the end of sixty years, to take over the railway from the Company at a fair price.

Immediately upon the granting of the Concession the Company set to work in Berlin and on the spot; the entire railway plant has been ordered from German firms, and German contractors have undertaken the construction of the bridges, whilst contracts have been made in Germany for the eventual delivery of the necessary locomotives, carriages, and trucks. The material already contracted for weighs about 85,000 tons, and has a value of 1,000,000*l.*; it will be shipped to Tsintau in German vessels. The rails, sleepers, and other requisites for the first 16 miles were dispatched last December, and the Chinese Government has accorded free entry for the railway materials. A commencement was made in September, 1899, at Tsintau and Kiao-chao on the permanent way, and a considerable piece of work was already completed in October.

Police. The police duties are performed by specially told-off members of the 3rd Marine Battalion and eight Chinese in Tsintau, and by a frontier-guard and 20 Chinese in Litsun.

Missions. The Christian Missions are four in number: the Berlin Missions Society, the Evangelical Protestant Missions Union, the Catholic Missionary Society, and the American Presbyterian Mission. The

three German Missions have been granted considerable land compounds free of cost and free of taxes, in consideration of the valuable services they have rendered the Protectorate.

Schools. The Government school for Chinese has 50 pupils. A new school for the children of German colonists has been built during the last year, in which boys between 10 and 16 can continue their studies.

Bacteriological Institution. A specially qualified naval doctor has been placed in charge of the bacteriological institution which has been established at Kiao-chao:

Public health. The Protectorate has suffered during the past year from various typhoid and dysentery epidemics, to which 29 men, up to December 18, 1899 (an average of 19·3 per 1,000), of the Protectorate troops, and two civilians (6·7 per 1,000), succumbed. The origin of the epidemics is attributed to the fouling of the water supply by the dirty habits of the Chinese, which are thought to have thoroughly impregnated the soil and caused impure filtrations into the water supply to take place. Energetic measures have been taken to combat the evil, and the Chinese have been ordered to keep to their own town, and will be punished for any infringement of the sanitary Rules laid down as to nuisances.

Hospital. A hospital containing 156 beds is in course of construction, and, indeed, a portion of it is already completed and occupied. It is pointed out that, although the state of the public health is unsatisfactory, it is improving, and that every young Asiatic Colony, under similar conditions, has had to suffer in like manner.

Harbour works. An immense amount of machinery needed for harbour requisites was imported from Germany during the last year. The construction of the stone breakwater from Woman's Island, destined to protect the harbour from the heavy breakers created by the north-west wind, was proceeded with as energetically as the weather permitted. Soundings taken during the past summer have shown that over an area 2½ miles square the harbour can be dredged to a depth of 10 metres, and in some places in the centre 18 metres, below the low-water level, and that the rock reefs can be utilised as foundations for quays, and will only have to be blasted to a small extent. It is intended to make the date of the completion of the harbour works coincide with the opening of the Weihsien section of the railway. The breakwater for Woman's Island will be finished, it is expected, up to the level of high-water this year. A harbour for vessels of small tonnage is to be built in Tapautau Bay, and will consist of an iron pier for loading and unloading and a protecting mole. The work is already in progress, and is expected to be completed next autumn. A sea-light is to be built at Tsha-lien-tan, and a harbour-light at Yu-nui-san. Work on the latter has been commenced, and the tower was to have been finished in December, 1899.

Drainage. Drainage and street-making have been energetically carried on at Tsintau, and the drains in the eastern part of the town are quite completed, and in the other part nearly so.

Public buildings. Besides the before-mentioned hospital, there is also a church and school-house in course of construction. A Provisional Court of Justice has been built, and barracks are to be erected as quickly as possible for the troops, since the old Chinese laager has been found so unhealthy.

Forestry. Efforts are being made to plant trees on many parts of the district that have been denuded of their forests by the Chinese, both for the purpose of preventing the land silting down into the harbour, and to improve the water supply. In the spring of 1898 plantations of Japanese deciduous and evergreen trees were made. A nursery has now been started in order to relieve the Protectorate of the cost of purchasing expensive Japanese trees. The long drought in 1899 did much damage to the young trees, of which only half the deciduous specimens and a quarter of the evergreens survived. Every possible effort is to be made to once more cover the Tsintau Mountains with forests.

Water. The water supply of Tsintau is at present procured from wells, but was found insufficient during the 1899 drought. It is thought that the removal of the Chinese town to a distance will cause the supply to suffice in the future, but measures for bringing water from the mountains are, nevertheless, under consideration.

Military. Only two small military expeditions were despatched into the interior—one in March to Jitshau to impress upon the authorities of Southern Shantung the necessity of taking measures to protect the Roman Catholic missionaries, and the other in June to Raumi to restore order after attacks had been made on the labourers on the railway.

German New Guinea and Dependencies

Bismarck Archipelago.

Government. On April 1, 1899, the Imperial Government took over from the New Guinea Company the administration of German New Guinea and the Bismarck Archipelago, including the Solomon Islands. The seat of Government was transferred from Kaiser Wilhelmsland to Herbertshoehe, in New Pomerania. The Governor of the Protectorate will be assisted in the execution of his duties by judges, to reside, the one at Herbertshoehe for the Bismarck Archipelago, and the other at Friedrich Wilhelmshafen for Kaiser Wilhelmsland, as well as by the requisite number of officials.

General review. The development of the Bismarck Archipelago has progressed favourably; the plantations have been considerably increased and trade has prospered, in spite of the fact that it was much hampered by the loss of several vessels. Its further development, while administered by the New Guinea Company, was largely hindered by the fact that the forces at the disposal of the company were not sufficient for the protection of the sea and coast trade, and were quite incapable of taking any action beyond the Gazelle Peninsula.

Population.

The total European population amounted to 200, of whom 96 were Germans. There were, moreover, 332 Chinese, Samoans, and Fiji Islanders in the Archipelago; 259 of the above-named immigrants dwelt in New Pomerania.

Public health.

Ten Europeans died between April 1, 1898, and June 30, 1899, four from malaria and two from black-water fever. The native population appears to be dying out on Hermit's Island and on Anchoret's Island, and great mortality is reported from Nissan.

Products and plantations.

Cocoanut trees, cotton, and coffee are the chief objects of cultivation in the plantations, six in number, which are in the hands of Europeans. The natives cultivate taro and bananas in several places in the Gazelle Peninsula.

Trade.

There is no official trade return, and the only statistics available are furnished by firms resident in the colony. In the case of dutiable articles, such as copra and trepang amongst the exports, and alcohol amongst the imports, it is possible to control the estimates, but comparison with previous years as regards other articles is impossible, as, whilst the administration was in the hands of the company, the returns of trade were not revealed. Copra and trepang are still the two leading items of the export trade with 3,632 tons (2,395 tons the previous year) and 302 tons (155 tons in 1898) between April 1, 1898, and March 31, 1899. The total value of the exports is put at 46,955*l.*, and that of the imports at 53,000*l.*, of which goods to the value of 30,000*l.* came from Europe, 16,500*l.* from Australia, and 6,000*l.* from Asiatic ports.

Shipping trade.

There were 10 sailing ships in the possession of merchants in the Archipelago, of which five were schooners of more than 50 tons burden, and one steam schooner. The trade with Herbertshoehe from April 1, 1898, to March 31, 1899, was carried by 112 sailing vessels and 20 steamers. Four vessels of war visited the harbour. Two ships were lost, a steamer and a sailing schooner.

The "Stettin" performs a bi-monthly service with Singapore, and the "Noresby" a six weeks' service with Sydney.

Labour.

Labourers are procured chiefly from New Mecklenburg, and Becka and Bougainville, of the Solomon group. So far, attempts to get labourers from the thickly populated Admiralty Island have failed.

Revenue.

The revenue collected from taxes, customs, and licences between April 1 and June 30, 1899, amounted to 736*l.*

Missions.

There are three missions in the Bismarck Archipelago, inclusive of the Solomon Islands: the Wesleyan Mission, the Roman Catholic Mission, and the Marist Mission, under the Samoan Apostolic vicar, the latter of which will, it is said, be transferred from the Shortland Island, where they now are, to Porporang Island.

(*a.*) Wesleyan Mission: A mission-house has been constructed at Raluana during the past year, and the Island of Ulu, of the New Lauenburg group acquired, on which a school of instruction for native mission helpers is to be established. The object of the mission is to educate the native Christians, so that they may take the place of the teachers hitherto brought from Fiji and Samoa.

The mission has three stations, each superintended by a white missionary: Ulu, with 41 stations, occupied by 13 Fiji or Samoan mission teachers, and 29 native lay helpers; Raluana, with 30 stations, occupied by nine Fiji or Samoan teachers, and 21 lay helpers; and Kabakada, with 23 stations, served by seven Fiji or Samoan, and 16 native mission teachers. The mission numbers 1,655 members, and 10,419 church attendants.

(*b.*) Roman Catholic Mission of the Sacred Heart of Jesus: This mission numbers 11 stations, with numerous schools for children of both sexes, and in Nuna Popa, the chief seat of the mission, there is also a "pensionnat" for white children, and an orphan educational establishment for native children. There is a bishop at the head of the mission, under whose supervision are 10 priests, 15 brothers, and 15 sisters.

Kaiser Wilhelmsland.

Plantations. In Stephansort tobacco and cotton are grown, whilst experiments are being made with the culture of coffee and cocoa trees. The 1897 tobacco crop was offered for sale at Bremen between April and June, 1898, and amounted to 70,100 lbs. in weight. The 1898 crop produced 6,100 lbs. less than that of the previous year, 1,220,000 trees being cropped; 90 fields were planted, as against 150 in 1897. About 20,100 kilos. of cotton were harvested at the end of September, 1898. The plantation possesses about 34,000 cocoanut trees, of which 13,000 are one year old, 15,500 two years old, 4,000 three years old, and the remainder older trees. The neighbouring stations of Constantinhafen and Crimhafen, likewise on Astrolabe Bay, possess respectively 7,000 and 2,400 trees. The latter place is the anchoring station of the Lloyd steamers. The palm trees suffer greatly from the ravages of a horned beetle. Kapok, a sort of cotton plant, has done so well that 9,400 more trees have been planted. Experiments have been made in the cultivation of *Isonandra gutta*, *Castilloa elastica*, *Hevea brasiliensis*, and *Ficus elastica*. The latter has done especially well, and has yielded a good sample of indiarubber. An administrator has been stationed at Friedrich Wilhelmshafen since the end of 1897, whose special duty is to do everything possible to promote the culture of tobacco in Jomba, which has been abandoned since 1894. At the end of September, 1898, there were 4,000 cocoanut palms and 2,350 kapok trees in the plantation, whilst 2,000 palm trees were discovered in the old plantation at Jomba. There is an abundance of mangrove trees suitable for building purposes at the harbour, and a considerable number of *Colophyllum-inophyllum* trunks are exported. Berlinhafen is on the Seleo Island, a few miles out at sea. The chief trade is the fabrication of copra, but the station possesses 5,000 palm trees.

Population. In 1898 there were about 30 Europeans resident in Kaiser Wilhelmsland.

There is a hospital for Europeans at Stephansort, and one for natives at Friedrich Wilhelmshafen. **Hospitals.**

The Rhenish Mission (Evangelical) has three stations in Kaiser Wilhelmsland: (1) Bogadjim; (2) Liar; and (3) Bongu, which were served by five missionaries on April 1, 1898. Since then illness has compelled three members of the Mission to leave the country, and the schools at Liar and Bogadjim have had to be closed. Education has, however, been proceeded with at Rajetta and Bonga, and it is expected that the full number of five missionaries will soon be made up again. **Missions.**

The Qeuendettelsau (Evangelical) Mission at Limbang, Tami Sattelberg, and Taminugeda, consists of seven missionaries. The school attendance amounts to about 25 in Limbang, and 12 to 15 in Sattelberg. As far as is possible, service is held in each village every Sunday, generally in the open air, but in a few places the natives have of their own accord constructed meeting houses.

The natives are generally friendly to the missionaries.

Marshall Islands.

The last report puts the number of foreign residents at 116, of whom 61 were whites, inclusive of 3 women and 2 children; 44 half-bloods, including 13 women and 22 children; and 11 Chinese. Of the 91 full-grown persons 50 were Germans, 9 English and 9 Americans: they comprised 5 officials, 2 Roman Catholic missionaries, 39 merchants, and 3 planters. **Population.**

Three marriages took place among the foreign residents; there was one birth and no death.

The Chiefs of the Ralik Islands dwell at Jaluit, and two of them, Loiak and Kabua, own three schooners of about 25 tons each, with which they carry on the copra trade between their possessions and Jaluit. The Chiefs of the Ratak Islands have, with the single exception of Murjil, of Maloelab, no ships, but the latter, who possesses Aurh, Wotje, Ailuk, and Utirik, as well as Maloelab, owns one schooner of about 40 tons.

The last season was very wet, and the trade wind, which usually blows from December to May, was, as in the previous year, absent. **Climate.**

The general state of health was satisfactory.

2,770 tons of copra were produced, as against 2,727 tons in 1897–98, and 2,417 tons in 1896–97. **Products and plantation.**

The chief plantations on Likieb, Ujelang (Providence), and Killi are entirely cultivated. New plantations have been started by the natives, under contract with the Jaluit Company, on the smaller islands of the Likieb group and on Eniwetok (Brown Island).

The rainfall was small on Likieb, Ujelang, and Eniwetok, and it is feared that the present harvest will suffer, whilst in Nauru thousands of young cocoa trees have perished, and a complete

failure of the crop is expected. Further, considerable damage has been done to several of the islands by the unusually high tides of last year; in some cases large pieces of land have been washed away with the cocoa palms on them, in others the plantations have been flooded and the ripe nuts carried away by the sea.

Trade and shipping. Messrs. Henderson and Macpharlane, of Sydney, have sold their property in the islands to the Pacific Islands Company (Limited).

About 24,000*l.* worth of goods were imported, in comparison with 28,000*l.* worth in the previous year. Goods to the value of 9,820*l.* came from Germany, of 7,990*l.* from Australia, of 3,840*l.* from England, of 1,885*l.* from North America, and of 195*l.* from China.

The total amount of the export trade consisted of 2,729 tons of copra.

27 vessels entered the harbour of Jaluit, of which three were German war vessels and six merchant steamers.

Means of communication. Since the cessation of the Spanish postal service Manila–Ponape, letters for the Marshall Islands are sent viâ Sydney as occasion offers, that is to say, sometimes at short intervals and sometimes after lapses of two months or more. The post formerly went by way of the Carolines and Philippines to Singapore.

Missions. There is nothing fresh reported concerning the American Boston Mission.

The Catholic Mission of the Sacred Heart, whose headquarters are at Hiltrup, near Münster, in Westphalia, has opened a school at Jaluit for the white and half-breed children living there. Teaching is carried on in German, and according to German school methods.

Scientific Researches.

African fund. A Goverment grant of 10,000*l.* is made on account of scientific researches in the German colonies for the year 1899; it is probable that this sum will not have been sufficient to meet all requirements, as from the returns already to hand it appears that 9,934*l.* has been expended, 6,165*l.* on behalf of Togoland, 1,979*l.* in the Cameroons, 700*l.* in East Africa, and 800*l.* in the Marshall Islands. In 1898 the sum of money expended for this purpose amounted to 14,600*l.*

The Colonies in the Reichstag.

Colonial Administration. In answer to a question respecting the measures it was proposed to adopt to improve the Colonial administrations, Dr. von Buchka, the Director of Colonies, explained that an endeavour would be made to extend the mercantile knowledge of the officials that more natives were to be employed in the subordinate posts, and that certain vexatious customs usages would be reformed.

The unhealthy nature of the tropical climates made it impossible to set up a regular colonial career, whilst it would not be practicable to amalgamate it with the Consular service, nor to recruit the officials more largely from amongst the merchants, since superior men of that class would require too high pay.

The Nyasa Company.

The Director of Colonies explained that the Nyasa Company had not as yet received their Concession because they had asked for additional grants of land that was required for other purposes. The Government had done their best to come to an arrangement, but had not been met by the Company. There was, moreover, gold in the district.

Protectorate troops.

A grant of about 1,500*l.*, for the increase of the East African military force, was refused.

An augmentation of the Cameroons military force was voted and the force will now consist of two companies of 250 blacks each.

Slavery.

A question as to whether it was true that slavery was still practised in the Cameroons colony was answered as follows:—

In the coast district where German authority is supreme slavery has been stamped out, but in the interior it still exists, where Mahommedan Chiefs hold sway.

Togoland.

The Director of Colonies said that the question of a hut tax in Togoland was not being lost sight of, and that German rights would be safeguarded in the delimitation of the neutral zone.

African railways.

The German Government bought the Usambara Railway from the German East African Company on March 10, 1899. It was contended that at the time of the purchase the Reichstag had been led to believe that the railway was in perfect order, and that the coffee plantations in the Usambara Mountains were in such a flourishing condition that the transport of the coffee alone to the coast would guarantee the success of the line. Subsequent events had shown that the railway when bought was in very bad order, and that the coffee crop had been such a failure that hardly any had been sent down to Tanga. The Director of Colonies acknowledged that he had said that the purchase of the Usambara Railway was a bad bargain, but he asserted that he thereby meant that it would have been a bad bargain for a private individual, but not so for a Government that had to consider the question of opening up a colony by a railway, rather than that of the actual profits to be made out of the concern. Turning to the question of the coffee crop, Dr. von Buchka said that it had most certainly suffered very grievously from the drought in the last two years, but pointed out that three firms had together exported 2,730 cwts. of coffee, which proved that under more favourable conditions the Usambara country would more than confirm the assurances given that it was extraordinarily well suited for the cultivation of coffee. A lengthy discussion ensued over the grant asked for in the Budget proposals of 115,450*l.*, for the continuance of the Tanga–Muhesa line to Korogwe, and for the cost of surveying operations of the route to be followed in carrying the line on to Mombo. The item was eventually sent back to the Budget

Commission, where it was again passed and was finally accepted by the Reichstag.

A similar fate awaited the demand for 5,000*l.* to complete the surveying operations for the proposed railway from Dar-es-Salaam to Mrogoro, and for 1,000*l.* for the laying of a telegraph line from Dar-es-Salaam to Kilossa. It was argued that the proposed line was really the commencement of the so-called central railway that was to traverse German East Africa from Dar-es-Salaam to the Lakes district, that it would cost Germany at least 7,500,000*l.* to make, and such a sum was not forthcoming unless private enterprise produced it.

Those German authorities on African questions who are in favour of the construction of a railway from Dar-es-Salaam to the Lakes district point to the fact that the distance to be traversed is but 1,200 kiloms., whereas it is from 5,000 to 6,000 kiloms. from the Lakes to Stanley Pool, whence goods must be transported a distance of 1,500 kiloms. by river and 500 kiloms. by rail before they can be put on board ship.

It is deduced from this circumstance that the Congo Railway cannot be considered in the light of a serious rival to the East African line, but that rather (once the line is made) the trade of the western portions of the Congo State would be diverted through German East Africa. The assertion that the German East African Protectorate is a steppe country, incapable of producing articles suitable for exportation is scouted, and it is claimed that the country offers quite as great facilities for the cultivation of oil-bearing plants as Senegal or Mozambique, both of which export large quantities of earth-nuts and sesame. In addition to the above articles of export, ivory, ostrich feathers, skins, india-rubber, cotton, minerals, and timber are cited as products of the country which would insure the success of the enterprise as a trade venture. Cotton, it is urged, could be grown in such quantities, if the means of communication were assured by the construction of the railway, as to render Germany quite independent of other countries for her supply of the raw material.

It is estimated that the cost of construction would amount to about 70,000 marks (3,500*l.*) per kilom., or, roughly, 4,500,000*l.* for the entire line.

The sum of 5,000*l.* asked for to meet the completion of the survey for the proposed line from Dar-es-Salaam to Mrogoro has been finally refused in the Reichstag.

Revenue and Expenditure, 1898–99.

Togoland.

In the Togoland estimates for 1900 the revenue and expenditure are balanced at 37,500*l.* A falling-off of 3,750*l.* is expected from the receipts of the customs, and the Imperial subsidy has been raised from 12,705*l.* to 13,500*l.* The anticipated falling-off in the customs is based upon the fact that successive bad harvests

have impoverished the merchants and reduced their purchasing power. A reduction of 600*l.* is made for the Protectorate troops, and 1,600*l.* less is to be spent on coloured labour.

Cameroons. The revenue and expenditure of the Cameroons are balanced at 118,985*l.*, an increase of 33,315*l.* on the Budget for 1899. The Imperial subsidy has been increased by 10,715*l.*, from 49,170*l.* to 59,885*l.* The customs are expected to produce 20,000*l.* more than they did last year, in spite of the fact that the imports have been somewhat checked by the introduction of the higher tariff in March, 1899. The Protectorate troops are to cost 2,000*l.* more than last year, and 12,000*l.* more will be required for white and coloured labour.

South-West Africa. The 1900 estimates make the revenue and expenditure of South-West Africa balance at 408,715*l.*, or an increase of 34,765*l.* on the previous Budget. It is anticipated that the customs will produce an increase of 10,000*l.*, and the Imperial subsidy has been raised from 345,450*l.* to 359,065*l.* Considerable sums of money are to be spent on lighting the coasts, in fitting up stations in the interior, in assisting German colonists (especially time-expired members of the Protectorate troops), in building storehouses, and in meeting the increased demand for European workmen, mechanics, and artisans.

German East Africa. The revenue and expenditure of German East Africa are balanced at 491,975*l.*, or an increase of 64,700*l.* in the last Budget. The hut tax is expected to produce about 10,000*l.* more than in 1899, and miscellaneous sources of income are estimated to give a further increase of about the same amount. The Imperial subsidy asked for entails an increase of 39,770*l.*, being 341,545*l.* this year as against 301,775*l.* last year. The chief augmented items of expenditure are 20,000*l.*, under the head of "Miscellaneous," for hospitals, schools, police equipment, &c.; 7,500*l.* for the Protectorate troops; 15,500*l.* more for the continuation of the railway from Muhesa to Korogwe; 5,000*l.* for the completion of the survey of the proposed line from Dar-es-Salaam to Mrogoro, and 1,000*l.* for a telegraph line from Dar-es-Salaam to Kilossa. The Imperial subsidy has been reduced in the Reichstag by 6,542*l.*, the grant of 5,000*l.* for the survey for the Dar-es-Salaam–Mrogoro Railway having been refused, and the extra grant of 7,500*l.* on account of the troops having been cut down by 1,542*l.*

Cost of the German Colonies, 1899–1900.

	1899.	1900.
	£	£
East Africa	301,775	335,003
Cameroons	49,170	59,885
South-West Africa	345,570	359,065
Togoland	12,705	13,500
	709,220	767,453
To which must be added colonies in the Far East—		
New Guinea	32,850	42,425
Caroline Islands	23,250	18,500
Kiao-Chao	..	489,000
	56,100	549,925
Total	765,320	1,317,378

Total Expenditure.

	£
Then there are about 150,000*l.* required to make up for the deficits on various Protectorate budgets, which, with various smaller expenses in connection with the colonies, make up a round sum for 1900 of about	1,500 000

Colonial Sources of Revenue.

Togoland.

	Receipts, 1898. £ s. d.
Direct Taxes.	
1. Dog tax for Lome and Klein Popo, 5 marks a-year (Decree of May 27, 1897)	10 15 0
2. Licence to sell spirits by retail, 100 marks a-year for each public house (Decree of December 10, 1894)	300 0 0
3. Tax on business establishments—	
(*a.*) If the business consists in the importation and exportation of goods, and is carried out in one place of business in the Protectorate only, 800 marks a year (40*l.*)	
(*b.*) If a person or company has several places of business in the Protectorate, one of them will be taxed as the chief place of business at 800 marks a-year, whilst each branch shop has to pay a separate tax of 400 marks (20*l.*), if it is in the coast district and deals directly in the export trade; in all other cases, 100 marks (5*l.*)	
(*c.*) When the owner of the business deals solely either in the import or in the export trade, the tax is 400 marks (20*l.*) for a single place of business or central depôt, and 100 marks for each branch shop	
(*d.*) A pedlar pays a tax of 500 marks (25*l.*) (Decree of August 1, 1899)	
Collected on the basis of previous higher rate of taxation	820 0 0
4. Licence to carry rifled fire-arms, 5 marks for two years for a rifle, 2·50 marks for a revolver or pistol (Decree of September 16, 1892)	8 10 0
5. (*a.*) Licence to trade in indiarubber for persons residing outside the Anglo-German Zollverein, or in the service of firms established elsewhere than in the above district, 1,000 marks a year (50*l.*)	
(*b.*) Licence to acquire indiarubber in village districts to which the persons carrying on the trade do not themselves belong, 500 marks (25*l.*) per half-year (Decree of February 20, 1897)	Nil
Customs.	
(In Togoland and British Gold Coast Colony, east of Volta.)	
(*a.*) Articles of export—	M. pf.
Sheep (Decree of September 24, 1897)	2 00 a-head
(*b.*) Articles of import—	
1. Gin, brandy, rum, liqueurs, spirits, or all alcoholic liquids without regard to their alcoholic strength..	0 22 per litre
2. Tobacco	0 50 per kilo.
3. Gunpowder	1 0 per lb.
4. Fire-arms	2 0 per piece
5. All other articles of import that are not expressly mentioned on list of articles exempted pay 4 per cent. of their value	

COLONIAL Sources of Revenue—continued.

Togoland—continued.

	Receipts, 1898.		
	£	s.	d.
DIRECT TAXES—continued.			
Customs—continued.			
(*c.*) A long list of articles of general use are exempted from paying customs Missions have customs exemptions up to 1,000 marks (50*l.*) a year for each mission			
The customs produced in 1898—			
(*a.*) Exports	9	5	0
(*b.*) Imports	15,125	0	0
Total	15,134	5	0
INDIRECT TAXES.			
Licence to load and unload ships on Sundays and holidays, 50 marks (2*l.* 10*s.*) (Decree of July 15, 1894)	85	0	0

RETURN of Import Trade for 1898.

Principal Articles.	Value.
	£
Cotton and cotton goods	37,000
Groceries and other commodities ..	6,200
Gunpowder	5,680
Salt	5,870
Spirits	24,150
Tobacco	9,675

	£	s.	d.
The gross value of the articles imported amounted to ..	129,546	5	0

A return of the country of origin of imported articles is not procurable.

Cameroons.

	Receipts, 1898. £ s. d.
DIRECT TAXES.	
1. Tax on trade in spirits, 2,000 marks (100*l.*) a-year for each shop (Decree of July 20, 1885)	1,600 0 0
2. Licence to sell spirituous liquors by retail, 100 marks (5*l.*) for each public-house (Decree of September 1, 1899)	Nil
3. Licence to trade by ship, 250 marks (12*l.* 10*s.*) a-month for each ship (Decree of October 15, 1896)	Nil
4. Gun licences (Decree of March 16, 1893)	33 10 0
Total	1,633 10 0

Customs.

(A.) Coast district—

(*a.*) Exports (returns not available).

	M. pf.
(*b.*) Imports—	
1. Spirits, rum, gin, spirits of wine, and other alcoholic liquids which are neither sweet nor mixed with any matter such as would cause difficulty in measuring the degree of alcoholic strength up to 49 per cent. Tralles	0 50 the litre
Each additional per cent. Tralles to pay an extra	0 5 „
Rum, gin, spirits of wine, and other alcoholic liquids, which are sweetened or contain adulterating matter calculated to impede the measurement of the alcoholic strength: for instance, all liqueurs	0 60 „
2. All sorts of firearms	2 50 per piece
3. Common or other gunpowder	0 15 per kilo.
4. Unprepared tobacco	0 50 „
5. Salt	10 0 per ton
6. Rice	0 2 per kilo
7. All other goods not specially taxed are charged at 5 per cent. of their value	

(*c.*) Are exempted from taxation:—

Articles landed by reason of shipwreck and destined to be re-exported
All articles destined for the use of the Government
All arms necessary for the equipment of officials
Travellers' ordinary luggage
Household articles and agricultural implements imported by a person who intends to settle in the Protectorate, provided they are for his personal use
Machines and the like requisite for plantations or for the construction of bridges, roads, &c., as long as they are not imported to be sold
All seeds
Railway and transport materials by sea or land
Scientific instruments not intended for trade purposes
Articles imported by missions for purposes of Christian worship and education, or for medical assistance

Cameroons—continued.

	Receipts, 1898.
DIRECT TAXES—continued.	
Customs—continued.	
Live domestic animals Empty casks and sacks which are to be filled with colonial products Building materials Pit coal (Decree of November 1, 1898, to take effect from March 1, 1899)	
Christian missions in the Protectorate, in so far as the goods imported are not for purposes of trade, have the right to a customs exemption of the value of 1,000 marks (50*l.*) each. (Decree of September 15, 1895)	
The receipts for the customs of 1898 are returned at 33,785*l.*, but are calculated at the lower rates of the tariff existing before the introduction of the above-given tariff	
(B.) For that part of the Cameroons protectorate which belongs to the western zone of the Congo basin—	
(*a.*) Export duties—	
1. Ivory	5 per cent. of the value.
Indiarubber	
2. Earth nuts	2·5 per cent. of the value.
Coffee	
Red copal	
White copal (inferior quality)	
Palm oil	
„ nuts	
Sesame	
The export duties on ivory and indiarubber are levied on the following general valuation :—	M. pf.
Ivory in pieces, tips, &c.	8 0 per kilo.
Tusks weighing less than 6 kilos.	12 80 „
„ 6 kilos. and more	16 80 „
Indiarubber	3 20 „
(*b.*) Import duties—	
1. Spirits	(Same rate as for Coast district.)
2. Arms, gunpowder, and salt	10 per cent. ad val.
3. All other goods that are not duty free	6 „ „
(*c.*) Articles exempted from duty—	
1. Ships, boats, steam engines, and all mechanical instruments required for industry, commerce, and agriculture, are exempted from paying duty for four years from the date of the putting in force of the tariff; at the termination of that period they are to pay a 3 per cent. ad val. duty	
2. Locomotives and railway plant are free of duty until the line begins to work, after that a 3 per cent. ad val. duty can be levied	
3. Scientific instruments, articles required for Christian worship or for medical purposes, as	

Cameroons -- continued.

	Receipts, 1898.
DIRECT TAXES—continued.	
Customs—continued.	
also personal luggage of travellers intended to settle in the Protectorate, pay no duty (Decree of April 1, 1899)	
No customs were collected in this portion of the Protectorate in 1898	
INDIRECT TAXES.	£ s. d.
1. Harbour tax for ships of less than 600 tons, increasing with the size of the ship, 50 marks (2*l.* 10*s.*) .. .. (Decree of February 10, 1891.)	645 0 0
2. Quarantine tax, 20 marks (1*l.*) each visit .. .. .. (Decree March 15, 1892)	95 0 0
3. Licence to load and unload ships on Sundays and holidays— Steamers, 100 marks (5*l.*) .. .. Sailing vessels, 60 marks (3*l.*) .. .. (Decree of March 8, 1892)	15 0 0
4. Licence to shoot elephants and hippopotami— Professional hunter, 2,000 to 5,000 marks (100*l.* to 250*l.*) .. .. Non-professional hunter, 200 to 5,000 marks (10*l.* to 250*l.*) .. .. (Decree of November 29, 1892)	200 0 0
5. Charge for use of Government powder magazine.. .. (Decree of March 16, 1893)	150 0 0

RETURN of Import Trade for 1898.

Principal Articles.	Value.
	£
Spirits	59,100
Textile fabrics	118,980
Salt	25,590
Iron and ironware	35,000
Groceries and comestibles..	40,000
Tobacco	18,840

	£
The gross value of the goods imported amounted to about ..	464,890

As in the case of Togoland, no return of the country of origin of the goods imported is obtainable.

South-West Africa.

	Receipts, 1898.
Direct Taxes.	
1. Licence—	
(*a.*) To sell spirituous liquors of all sorts up to 8,000 litres per annum, 300 marks (15*l.*)	Returns not given
(*b.*) To sell wine and beer up to 8,000 litres per annum, 200 marks (10*l.*)	
The tax increases in each case by 200 marks (10*l.*) a year for each additional 8,000 litres	
(Decrees of May 27, 1895, and September 9, 1898)	
2. Road and carriage tax—	
(*a.*) Each ox-wagon, 40 marks (2*l.*) a year	
(*b.*) Each ox-cart and light carriage, 20 marks (1*l.*) a year	
All Government and post conveyances, as well as those employed by priests and missionaries, are exempted	
3. Tax on travelling trade—	
(*a.*) By means of a carriage: three months, 40 marks; six months, 80 marks; a year, 140 marks (7*l.*)	
(*b.*) By means of a cart: three months, 20 marks; six months, 40 marks; a year, 70 marks (3*l.* 10*s.*)	
(*c.*) Without any conveyance: three months, 10 marks; six months, 20 marks; a year, 30 marks (1*l.* 10*s.*)	
The sale of horses and mules up to 10, of cattle and donkeys up to 30, and of sheep up to 100 head, is taxed according to class (*b*), and according to class (*a*) when in greater numbers	
(Decree of June 26, 1895)	
4. Gun licence, 5 marks for five years on first delivery, 3 marks for each renewal	
(Decree of March 29, 1897)	
5. Dog tax for Great and Small Windhoek, 10 marks a year for each weaned dog	
(Decree of December 24, 1898)	
Customs.	
(A.) Exports—	M. pf.
1. All descriptions of guano—	
(*a.*) For each vessel entirely or more than three parts laden with guano, for each ton commenced or completed	22 50 (1*l.* 2*s.* 6*d.*)
(*b.*) For vessels of which less than three parts of their cargo is guano and for overland exportation, for each 100 kilos.	1 50 (1*s.* 6*d.*)
2. Seal and walrus skins, the skin	2 0
3. Ostrich feathers, raw or cleaned, the kilo... ..	2 0
4. Cattle of every age and sex, a head	60 0 (8*l.*)
5. Sheep and goats, a head	10 0
(B.) Imports—	
Ship biscuits, maccaroni, spirits of wine necessary for mechanical and scientific purposes, mineral waters,	

South-West Africa—continued.

	Receipts, 1898.
DIRECT TAXES—continued.	
Customs—continued.	
alcoholic dyes for medical requirements, medicinal teas, sail-cloth for cart awnings and tents, and nearly all iron, glass, earthenware, porcelain, india-rubber, paper, straw, copper, tin, zinc, and metal goods, are duty free Other articles pay duties according to the tariff, those especially heavily charged being fire-arms, tobacco, and spirits	
(c.) Other articles exempted from duty are in accordance with the list (*c*) for Cameroons. Missions are allowed up to 60*l.* (1,200 marks) per annum worth of goods duty free, but alcoholic beverages, tobacco, and cigars, are excluded (Decrees of October 10, 1896; October 15, 1898; and October 30, 1898)	
	£
The duties on exports and imports produced in 1898 ..	31,435
INDIRECT TAXES.	
1. Stamp tax for licence to purchase and import spirituous liquors—	M. pf.
For one or two bottles of spirits	0 50
For more than two	1 0
For a case	3 0
(Decree of January 8, 1896)	
2. Licence to shoot game with a following of riding, draught, or baggage animals	Up to 1,000 marks (50*l.*)
(Decree of January 4, 1892)	

RETURN of Import Trade for 1898.

Principal Articles.	Value.
	£
Iron and ironware	38,500
Groceries and comestibles..	35,950
Wooden wares	21,850
Beer	18,650
Coffee	11,650
Meal..	17,350
Cotton goods	21,000

The gross value of the goods imported in 1898 amounted to 293,414*l.*, of which articles to the value of 244,180*l.* were imported from Germany, of 40,000*l.* from the Cape, and of 7,500*l.* from England.

German East Africa.

	Receipts, 1898. £	s.	d.
Direct Taxes.			
1. House and hut tax—			
Class I. Stone houses constructed in European, Indian, or Arabian style—			
(*a.*) In town districts			
(*b.*) In country districts			
Class II. Native houses and huts—			
(*a.*) In town districts			
(*b.*) In country districts			
For Class I (*a*) the rent is taken as the basis for the tax, at the rate of 5 per cent. of the rent paid, but in no case must it exceed 100 rupees a year	10,400	0	0
For Class I (*b*) there are three degrees of taxation, 30 rupees, 20 rupees, and 10 rupees a year			
For Class II (*a*) there are two degrees of taxation, 12 rupees and 6 rupees a year			
For Class II (*b*) 3 rupees a year is fixed as the tax to be levied			
For Classes I (*a*) and II (*a*) 50 per cent. of the tax is deducted on a building standing on fiscal ground (Decree of November 1, 1897)			
2. Industrial tax—			
The tax is levied in seven classes, at the respective annual rates of 360 rupees, 240 rupees, 120 rupees, 60 rupees, 36 rupees, 12 rupees, and 6 rupees. In addition, a tax is levied for a licence to carry on business as a publican, huckster, pedlar, hawker, broker, and auctioneer, in the following ratio:—			
(1.) An open shop, 200 rupees, 100 rupees, or 25 rupees			
(2.) (*a.*) A public house, 240 rupees			
(*b.*) Coloured publicans, who are not licensed to sell European spirituous liquors, 60 rupees			
(3.) Huckster, pedlar, hawker, broker, auctioneer, 12 rupees			
A fourth part of the tax first paid is charged for the renewal of one year's licence (Decree of February 22, 1899)			
3. Licence to carry a rifle, 15 rupees, and 5 rupees for the renewal of a five years' licence .. .. (Decrees of 1892 and 1894)	165	0	0
Customs.			
Export duties—			
Almost all articles of colonial export have to pay duties on exportation, with the exception of—			
1. All goods belonging to the Imperial Government or goods of African origin			
2. Cattle for food and native products for the use of the Imperial navy			
3. Clothes and linen			
4. Goods of African origin exported by travellers or ships' crews; also similar wares sold on board			

German East Africa—continued.

	Receipts, 1898.
DIRECT TAXES—continued.	
Customs—continued.	
European vessels by coloured hawkers, if not exceeding a value of 20 rupees	
5. All ethnological objects not exported for trade purposes	
6. Unprofitable animals of all kinds (dead or alive)	
7. Suckling camels, horses, donkeys, calves, lambs, or kids following their dams	
8. Products of local plantation worked by Europeans	
9. Copra	
10. Goods from Europe re-exported before having been nine months in the Protectorate	
Import duties—	
1. Spirituous liquors of all kinds, except beer, wine, vermouth, and sparkling wines (alcoholic perfumes being taxed as spirits), ad val.	20 per cent.
2. Maize, negro-corn, lentils, and all similar corn and pulse not otherwise mentioned in the tariff, per 100 ratel* ..	30 pesa
3. Rice, unhulled, per 100 ratel	30 „
4. Rice, hulled „	40 „
5. Chiroko „	80 „
6. Fish, dried and salted, ad val.	15 per cent.
7. All other goods not specially exempted, ad val.	10 „
The list of articles exempted from paying import duty is similar to that in other African colonies (Decree of January 1, 1899)	
Each Christian mission has the right to be reimbursed up to 150*l.* a-year for the duties paid. Special higher exemptions are made in favour of the Roman Catholic missions of the—	
(*a.*) "Congrégation du St. Esprit et du St. Cœur de Marie," 300*l.*	
(*b.*) "St. Benedictus," 250*l.*	
(*c.*) Algerian Mission of the "Pères Blancs," 250*l.*	
Inland Frontier.	
Export duties—	
1. Ivory, copal, and indiarubber, ad val.	15 per cent.
2. All sorts of woods, negro tobacco, skins and furs, rhinoceros horns, hippopotamus tusks, "schildpatt" pepper, salt, oil, and fat, ad val.	10 „
3. Cattle, per head	5 rupees
4. Sheep, goats, &c., per head	32 pesa
5. Muscat donkeys, per head	15 rupees
6. Other donkeys, per head	5 „
Import duties—	
1. Spirits of all kinds, ad val.	20 per cent.
2. Firearms and shooting accessories, ad val.	10 „
3. All articles for barter and European necessaries, ad val. .	5 „

* 1 ratel = 1 lb. avoirdupois.

German East Africa—continued.

	Receipts, 1898.
Direct Taxes—continued.	
Inland Frontier—continued.	
No exemption for imports, except for— Machines and implements for agricultural purposes, as well as materials for the conservation and construction of roads, tramways, railways, and, in short, all means of transport (Decree of August 1, 1898)	
The duties on imports and exports produced in 1898 ..	£ 80,000

Indirect Taxes.

	£	s.	d.
1. Death duties— 2 per cent. for coloured inheritances under Class I; in all other cases, 5 per cent. .. .. (Decree of November 4, 1893)	1,675	0	0
2. Tax on spirits manufactured in the Protectorate, 10 rupees the hectolitre (Decree of January 16, 1893) Tax produced nothing in 1898			
3. Harbour tax on dhows, &c., coming from abroad under a foreign flag, 5 rupees a-year.. .. .. (Decree of May 13, 1893)	205	0	0
4. Medical visits to ship, 15 rupees (Decree of June 15, 1896) Produce of tax not given			
5. Yearly game licences— (*a.*) For Europeans, 10 rupees .. .. (*b.*) For professional European hunters, 500 rupees .. (*c.*) For each non-native member of a hunting expedition, 800 rupees .. .. (*d.*) For native, 5 rupees .. .. (*e.*) Professional native elephant and rhinoceros hunters, 500 rupees .. .. (*f.*) For each elephant killed, a tusk or 100 rupees .. (Decree of January 17, 1898)	290	0	0
6. Licence to fell timber, 30 per cent. of the value of the timber felled, except in the Rufiyi district, where special regulations are in force, and in the case of a number of specified varieties of trees, and for timber felled for a specific purpose .. .. (Decree of April 1, 1899) The felling of timber in the Rufiyi district is reserved to the Government, which sells the wood. Special rights and privileges are accorded to individuals and companies (Decree of September 30, 1898)	1,465	0	0
7. Statistical tax of duty-free articles of a value of 100 rupees, 8 pesa .. .. (Section 30 of the Customs Ordinance of January, 1899) 8. Sailing licence to empty native craft, 8 pesa..	925	0	0

RETURN of Import Trade for 1898.

Principal Articles.	Value.
	£
Cotton goods of all sorts	269,320
Rice, hulled and unhulled	95,460
Comestibles and groceries..	48,050
Ironware articles	22,390
Building materials..	14,810
Spirits and alcoholic beverages	26,670

The gross value of the goods imported in 1898 amounted to 592,630*l.*, of which articles to the value of 112,600*l.* were imported from Germany, of 351,200*l.* from Zanzibar, of 99,700*l.* from India, of 4,716*l.* from Great Britain, and of 24,350*l.* from other countries.

It is considered more convenient and more interesting in the returns of trade for East Africa and South-West Africa to give the countries from which the goods were imported rather than the actual countries of origin.

German New Guinea.

	Receipts, 1898.		
	£	s.	d.
Direct Taxes.			
1. Industrial and income tax— (*a.*) The industrial tax is levied on a scale of six stages, at 40 marks, 80 marks, 120 marks, 240 marks, 400 marks, and 600 marks .. .. (*b.*) The income tax levied on an annual income of from 50*l.* to 75*l.* is 6*s.* Incomes of more than 75*l.* pay 2 per cent. .. .. (Decree of June 30, 1888)	435	0	0
2. Licence to trade with ships other than native— For ships of 50 tons register and less the tax is 7*l.* 10*s.*; for ships of more than 50 tons, 2*l.* 10*s.* more for each additional 25 tons or part thereof, up to 50*l.* If the licence is taken out for more than six months the tax is raised in proportion to the length of the period, which can extend over one year .. .. (Decree of August 25, 1894)			
3. Licence to sell arms, ammunition, or explosives, as well as spirits to the natives— (*a.*) The tax amounts to 30 marks when the licence is to sell all the above-mentioned articles .. .. (*b.*) 20 marks when it is only for the sale of one or more.. .. .. (Decree of January 27, 1888)	525	0	0
Customs.			
Export duties— 1. Copra, 4 marks per ton Import duties— Duties are levied on all sorts of wines and spirituous liquors There are no exemptions from the duties			
The import and export duties produced in 1898	1,770	0	0
Indirect Taxes.			
1. Quarantine tax— Ships of 150 tons burden .. .. .. 20 marks „ 300 „ .. .. .. 30 „ „ more than 300 tons burden .. 40 „ (Decree of September 29, 1891) Returns not available for 1898			
2. Licence to shoot birds of paradise — 5*l.* for one year, but the tax can be increased or diminished to 1*l.* if necessary (Decree of December 27, 1892)			

Marshall Islands.

	Receipts, 1898. £ s. d.
Direct Taxes.	
1. Industrial tax—	
Mercantile firms established in the Protectorate pay in the first category, 750*l.* a-year; in the second category, 300*l.* a-year	
Public-houses of all sorts pay 40*l.* a-year.	
Sailing ships trading for firms not established in the Protectorate pay a tax of 112*l.* 10*s.* for each journey of 30 days' duration, and 3*l.* 15*s.* for each additional day. Steamships (including auxiliary sailing ships) pay twice as much as sailing ships	
Each station on the Marshall Islands pays 5*l.* a-year, and on Nauru 100*l.* a-year	
(Decree of November 10, 1895, and Supplementary Decree of October 29, 1899)	
The tax produced in 1898 about	1,410 0 0
2. Personal tax for natives—	
This tax consists in the levying of 360,000 lbs. of copra, valued at 4 pf. the lb., or 720*l.*, of which a third is paid as a premium to the chiefs who collect the copra	
3. Poll tax—	
For persons of more than 16 years of age, who are not considered as native born, 20 marks. Members of missions excepted	
4. Plantation tax— £ s.	
(*a*.) For Likieb 50 0	
(*b*.) For Udjelang 6 5	
(Decree of August 29, 1898)	
The last three taxes produced in 1898—	
Personal tax for natives	480 0 0
Poll tax	75 0 0
Plantation tax	56 5 0
	611 5 0
(No customs levied)	

No trade returns are available for German New Guinea and for the Marshall Islands.

Subsidised Steamship Services to Africa and the Far East.

By a Law of April 6, 1885, the Imperial Government was authorised to organise and subsidise ocean postal steamship services between Germany and the Far East and Australia, with a subsidy of 220,000*l.*, of which 85,000*l.* was for the branch line to the Far East, 115,000*l.* for the Australian line, and 20,000*l.* for a branch Mediterranean line. The subsidy contract, which was to last 15 years, was given to the North German Lloyd Company. A Bill, by which a further subsidy was to be granted for 75,000*l.* to the North German Lloyd Company in return for the establishment of a fortnightly service between Germany and China, was brought before the Reichstag in 1896, and, after being abandoned in 1897, was finally adopted on April 13, 1898. By the provisions of this Bill, the Chancellor was empowered to continue the subsidies, conjointly with this new one, to the North German Lloyd Company for 15 years. The contract consequently made by the German Government with the North German Lloyd accords the Company an annual subsidy of 279,500*l.*, payable monthly, the contract to last for 15 years from April 1, 1899. The mail service contract to Australia and the Far East originally included a monthly service between Sydney, Tonga, and the Samoan Islands. This branch service was abandoned in 1893, as the trade was not found lucrative, and a line established in its stead between Singapore and German New Guinea. With the acquisition by Germany of the Caroline Islands and Samoa, it is felt that the mail service to those islands must be improved, and a petition has been addressed to the Chancellor by the Colonial Society asking for an adequate service for Samoa and the Caroline Islands, and an improved service to German New Guinea.

On January 21, 1890, a grant of 45,000*l.* was agreed to for a period of 10 years for an East African line from Hamburg to Delagoa Bay viâ Rotterdam, Lisbon, Naples, Port Said, Suez, Aden, Zanzibar, and Mozambique. The total amount, therefore, paid by Germany as subsidies for mail service amounts to 324,500*l.* per annum. A Bill is, however, before the Reichstag which proposes to increase the subsidy now paid for the African service. The new contract is to be for a service of steamers travelling right round Africa alternately from east to west, and by a branch line through the Suez Canal to and from East Africa. The subsidy is to be increased by 22,500*l.*, that is to say, from 45,000*l.* to 67,500*l.*, and it is proposed that the claims of the East African line to the next contract shall be considered in the first instance. The existing contract expires at the end of this year, but it is intended that it shall be prolonged till April 1, 1901, on which date the new contract is to come into force.

(75 6 | 00—H & S 597)

No. 535 Miscellaneous Series.

DIPLOMATIC AND CONSULAR REPORTS.

GERMANY.

REPORT ON

GERMAN EAST AFRICA, JULY 1, 1892, TO JULY 31, 1899.

Presented to both Houses of Parliament by Command of Her Majesty,
AUGUST, 1900.

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Report on German East Africa, July 1, 1892, *to July* 31, 1899,

By Mr. Vice-Consul Dundas.

German East Africa is bounded on the north by British East Africa and Lake Victoria Nyanza, on the west by Lakes Tanganika and Nyassa, on the south by the River Rovuma, and on the east by the Indian Ocean. It stretches in an irregularly shaped square from 1° to 12° south latitude, and 29½° to 40½° east longitude, with a coast line of 750 kiloms. from 4½° to 10½°. The total area is about 995,000 square kiloms., and is therefore about twice the size of the mother country (540,592 square kiloms.*). **Boundaries and position.**

This large territory is a part of the highlands stretching from Abyssinia to the Cape, the highest point being Mount Kibo (6,130 metres) in the Kilimanjaro range, which range covers a space of 3,770 square kiloms. Portions of the three great lakes are also included in the territory. They are:—

Lake Victoria, 1,180 metres above the level of the sea, with an area of about 66,000 square kiloms. (about the size of Bavaria). **Lakes.**

Lake Tanganika, 880 metres above the level of the sea, and 35,000 square kiloms. in size (about the size of the province of East Prussia).

Lake Nyassa, 500 metres above the level of the sea, and 27,000 square kiloms. in size (about the size of the province of West Prussia).

The plateaux in the interior are somewhat sterile. The following rivers run into the Indian Ocean (from north to south):— **Rivers.**

The Umba, boundary between German and British East Africa.

Pangani, with its sources in Mount Kilimanjaro.

Wami and Kingani, whose mouths are opposite Zanzibar.

Rufigi, flowing out opposite Mafia Island.

Rovuma, the boundary between Portuguese and German East Africa.

Into Lake Tanganika flows the Mlagarassi, and the Kagera into Lake Nyassa.

German East Africa is in the Tropical zone. From May to September the south-west trade wind prevails, and the north-west one from December to March. The winds carry the moisture over the mainland and regulate the dry and wet

* 1 metre = 39·37079 inch; 1 kilometre = ·621 mile.

seasons, which in the interior last each about six months. But on the coast there are, as a rule, two wet seasons, the principal rains of which fall in May and November after which a cool period follows, the temperature in daytime being about 30° C., and 10° C. at night.

Past history. Before the mainland had become German territory it already possessed a history and a certain amount of culture. The ancient civilised peoples (Phœnicians, Indians, Arabs) had already a knowledge of the territory before they discovered Ophir (Zimbabwe), and roughly speaking the routes to the gold glittering lands of the south were known to the Persians and Arabs over 1,000 years ago. With the expansion of Islam, the Arab began to make the land his domicile, and formed small sultanates of which Zanzibar, Mombasa, and Kilwa were the most important. From the interior they brought down the natives as captives who were exported as slaves to various parts of the Mahomedan world.

The Portuguese, on their way to India, found a highly civilised people of Arab culture living along the coast, and in 1498 they commenced, under the leadership of Vasco de Gama, to subdue the coast towns. Soon, however, the power of Portugal in these parts began to wane, and ultimately the Imam of Muscat set about driving out the European, which he accomplished successfully in 1698. Now, only here and there are to be found signs of the Portuguese conquest, and the Arab on his part has completely annihilated all there was of Christian European culture.

The sovereignty of the conqueror, centred in Zanzibar, stretched across to the mainland, embracing petty sultans and chiefs who afterwards, however, defied their suzerain, and ruled without much regard to his wishes. In time, owing to continual slave raiding, the land adjacent to the coast became thinly populated, and the Arab was forced to go further inland in search of his victims. Right in the centre of the territory strong fastnesses began to grow up, especially in Tabora, Njangwe, and Ujiji, and here the new master ruled with a rod of iron, and lived on the spoil of the land.

Since the middle of the century the Arab prestige on the coast has begun to experience a slow decline. The Indian with his business aptitude had appeared on the scene, and was able to usurp the power of the Arab. The Arab, beyond relying on slavery and property, had, unlike the Indian, no resources to fall back on, and was forced to borrow from the latter, whereby in time he became financially subject to the Indian.

Such then was the state of the territory at the time Dr. Carl Peters arrived in the autumn of 1884. With a few companions he went up-country, and by treaties with the native chiefs secured Useguha, Ukani, Usegara, and Uguru for the German East Africa Company, and in February, 1885, he obtained an Imperial Letter of Protection. Later on more land was annexed by the company, and at length they had so much territory to control that financial failure set in, especially as a large force was required to guard the territory.

In April, 1888, a contract was made between the Sultan of Zanzibar and the company, by which the latter took over all the export duties and exercised sovereignty in the name of the Sultan of Zanzibar, and were at the same time bound to hoist the Zanzibar flag. In August, however, a great rebellion broke out, the chief scenes of which were in Pangani and Bagamoyo, and not until Major von Wissmann arrived in March of the following year did the Germans begin to successfully suppress the rebellion. He ultimately captured and hung the chief rebel, a half Arab named Bushiri.

With the end of the rebellion came Imperial authority and the buying out, by the Government, of the company's rights. By the agreement the company are entitled to receive 30,000*l.* a year, payable in 90 half-yearly instalments, the last payment to become due on December 20, 1935. Part of this 30,000*l.* a year has to be spent on German East Africa. After 1935 a sum of 500,000*l.* will be paid up in full. Furthermore, the company has certain rights over minerals and land along parts of the coast.

In 1885 the Independent State on the Congo and Germany concluded an agreement regulating the eastern boundary, and on December 30, 1886, the southern boundary opposite Mozambique was settled with Portugal, whilst Great Britain and Germany came to an agreement on July 1, 1890, as regards the northern boundary.

In 1890 the Sultan of Zanzibar waived all his sovereign rights over the mainland and over the Island of Mafia, and in return received an indemnity of 200,000*l.*

Population.

The population consists of about 4,000,000 people, principally Bantu Negroes. Along the coast dwell the Arabs, Beloochis, Indians, Goanese, Syrians, Egyptians, Turks, and Swahilis, the latter a people of Arab and Negro blood, and of higher culture than the tribes of the interior, whom they despisingly speak of as "Washenshi," that is, "people of the jungle." As regards the inhabitants of the interior they may be put into two classes, the elder and younger Bantu tribes.*

The elder Bantu tribes.

First of all may be reckoned the tribes inhabiting Usambara and the adjacent lands of Useguha and Unguu, the second group being in Usagara, Ukani, and Kutu, and it is possible that the southern tribes of the Wagindo, Wakondete are allied to them. The Wassaramo and Wadoe form a third group, but it is not certain as to whether this group belongs to the elder or younger Bantus.

Closely allied to these are the Wanyamwesi, the elder Bantus of the central territory, as are also the tribes living on the shore of Lake Victoria, and in the west up to Lake Tanganika. They all have one common language.

All the above tribes live in huts with a cone-shaped roof.

* I am indebted to Dr. Stuhlman for the information on the elder and younger Bantus.

They have a triangular-shaped piece cut out of both of the upper middle incisor teeth, whilst they do not disfigure their bodies. Some of the Wanyamwesi tattoo their foreheads, but this practice does not seem general.

Next in order come the people inhabiting the territory between the lakes. Most probably they are an ancient race who originally lived in the country from south of Unyoro to Lake Tanganika and the shores of the Victoria Nyanza; perhaps even as far as the south-east of that lake, and it is supposed that this race once spoke a language akin to the Kirundi and Kikonjo of to-day. They appear to have intermarried with the Nile tribes (Sheffalu), and one is led to believe the habit of extracting the four lower teeth has been copied from them.

The Hamitic tribes living in the north-east, classified under the name of Wahuma, are said to have come into this territory not all at once, but by degrees; shepherd tribes, bringing with them a stock of cattle similar to that in some regions of the Nile and Southern Abyssinia. Upon their arrival in Unyoro, they dropped their own Hamitic language and adopted the Bantu dialect, which they again taught the tribes conquered by them, and occupying the land between the lakes. So is it that the same dialect—Kinyoro—is spoken from the Somerset Nile to Ussui and Ussinga. On the other hand, the southern regions, Urundi and Ruanda, which are inhabited by the same group of tribes, have still kept their original language, which is somewhat allied to Kinyoro, and the conquerors have not carried into the southern regions the practice of extracting the four lower teeth, only the pure-blooded Wawiti-Wachuma ruling the north keep up the custom. It is also characteristic of them that they do not disfigure their bodies (piercing of the ears, tattooing, &c.). They live in huts with the roof reaching to the ground in open villages, or scattered about in the banana groves; as regards clothes, a skin fastened over the shoulder serves the purpose.

The younger Bantu tribes.

It would seem that the younger Bantu tribes have wandered but recently from the north, and there is a sprinkling of Hamitic blood in them. They probably once lived in the regions around Kikuyu, but owing to the advance of Hamitic and Nile Hamitic tribes, have settled further south and intermarried with the aforesaid tribe. With these may be reckoned the Wakamba, Wateita, the people of the Kilimanjaro lowlands, and some of those inhabiting Usambara and the adjacent countries, the population on the plateaus of Irambo, Toru, Umbuwe, and Irangi, the Wakaguru, and finally the Wakogo. They practise the marking of their bodies, and most of them remove the two lower incisors, whilst the two upper are forced forward, a custom pointing to northern origin. The southern part of these tribes live in mud-built huts, similar to those of the Masai. All carry on cattle-breeding, and are armed with spears and hide shields. Many have imitated Masai customs and weapons, especially the Wachaga and Wakaguru, who might be termed "False Masai."

Those inhabiting Shashi and speaking Kinyoro, have also taken up the customs of the "Younger Bantus," wearing the same clothing, and being armed in the same manner, and practising circumcision.

From the south have come the Zulus, but in comparatively early times. From the shores of Lake Nyassa right up to Usagara some are scattered here and there, whilst in other parts powerful elements of them are met with. Many have intermarried with the Bantu tribes, and have kept up some of their ancient customs. They are met with, as in Uhehe, in "Tembe" villages, which doubtless they have captured from other tribes. Others again have reached the neighbourhood of Lake Victoria (Watuta and Wangoni), and as Wayao some have advanced towards Lindi. They are recognisable by their oval shields of raw hide, short throwing spears, and the practice of circumcision.

The Wakua also have come from the south, and seemingly belong to a particular southern group of the elder Bantu tribe. Their wives have the upper lip pierced and wear a piece of ivory in it.

Pigmies have been met with in Urundi, but they are not pure blooded.

A marked difference is noticeable between the Hamitic and Negro races. The former have small faces and noses, and, above all, curly and silky (not crinkly) hair. In this they resemble the Semitic more than the Negro race. Besides these, east of Lake Victoria apparently pure-blooded Hamitic races have been met with, especially the population of Masai, Mfiome, Iraku, and Wambulu.

Much has been discussed and conjectured as regards the Masai, a stalwart and once very powerful race. According to some authorities they would seem to have sprung from the Hamitic people. Many among them have the curly hair of the Somali and Galla, and resemble them in build. In language they are like some Nile tribes, especially the Bari and Latuka.

The Lango (Wakido) and Massai are believed to have sprung from the same race, but the people of Turkan, Suk, &c., are quite of a Nile type, just the same as the Wandorobo. In the desert Nile people are met with who have gone over to the Hamitic race, also pure Nile and Hamitic people; as a whole, they might be classed as Nile Hamitics. From the north successive advances have taken place of Hamitic and Nile negroes, who have intermarried, but, nevertheless, kept up the Nile dialect. At no recent period have the Wakwafi and Wataturu immigrated, but have in turn been driven away and partly annihilated by the Massai. The former settled in Unguu, Usambara, &c., whilst the latter wended their way towards Ugogo, Usukuma, and Shashi. A perfect chaos of nomads are to be found in the country north-east of the Nyanza, Massais, Watuturu, &c., and some of the "Younger Bantus" extract the two lower centre incisors and make the two upper project forwards. The former also practise semi-circumcision, whilst the other tribes perform it completely. In regard to the

hair, weapons, &c., Masais, Wagogo, Wachaga, and Wataturu are all alike.

It is, however, a matter of great difficulty to discern rightly the origin of the language and original country of the various tribes. They have no idea of time or history, and facts do not appear to be handed down from father to son. With them the present is the only matter of importance. Everything is dated as "so many harvests before or after such and such a great event," generally a drought or great rainfall.

The different tribes of German East Africa may be grouped as follows:—

I. *Bantu.*—(*a*) Elder Bantus:—

1. Coast tribes (Wasseramo, Wasegua, Wassagasa, Wagindo, &c.).
2. Wanyamwesi (including Warori, Wafipa, Wassakuma (?), Wagindo, Wanyassa (?)).

(*b*) Bantus of the territory between the Lakes.—(a) Speaking the original language (Kirundi):—

1. Pure early population with Wachuma chiefs (Ruanda, Urundi, Ussige, &c.).

(b) Speaking Kingoro:—

1. Without Wachuma chiefs (Shashi).
2. With Wachuma chiefs (Karagwe, Kisiba, Mpororo, Ussui, Usindja, Fipa (?), &c.).

(*c*) Younger Bantus (allied in language to those occupying the territory between the Lakes):—

1. Northern group (Wakamba, Wachagga).
2. Southern group (Wagogo, Warangi, Wanyaturu, Wambugwe, Wakaguru, &c.).

N.B.—Some are so-called "False Masai"; some have a strong Hamitic admixture.

(*d*) Southern Bantus:—

1. Makua, Wanyassa, Anyaanja, &c.
2. Zulu type (Wayoa, Wangoni, Mafiti, Wahehe). Many are only so-called "False Zulu."

II. *Hamitics.*—Eastern Hamitics:—

1. Galla type (Wafiome, Uassi, Iraku, Wambulu).
2. Wachuma (Bantu Hamitics, speaking Bantu dialect).
3. Masai kind of tribes, partly mixed with Nile tribes, and partly speaking a Nile dialect (Nile Hamitics).

1. Elder Wataturu (Mangati), Totoga, Wambulu, Wakwafi, Wambugwe.
2. Younger (Masai).
3. Northern (similar to the Masai Wanderobbo).

III. *Pigmies*:—Watwa.

IV. *Swahilis living along the Coast.*—Semitic and Ayrian admixtures of Arabs and Persians.

CENSUS of White Population, according to Domicile and Nationality.

District.	Total Number.	Germans.	Austro-Hungarians.	Italians.	Swedes.	Dutch.	Belgians.	Luxemburgers.	French.	British.	Russians.	Danes.	Roumanians.	Greeks.	Turks.	Syrians.	Americans.	Of no Nationality.
Tanga	147	106	2	8	..	4	..	..	2	15	2	1	..	6	..	1	..	..
Pangani	25	22	1	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..
Saadani	7	5	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Bagamoyo..	57	31	2	1	1	..	..	..	11	3	..	..	..	2	4	3	..	..
Dar-es-Salam	288	249	8	5	3	..	..	..	2	..	..	1	2	9	..	1	1	..
Kilwa	33	29	1	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Lindi	21	19	..	..	1	..	..	..	..	1	..	..	..	..	..	1	..	..
Mikindani..	12	6	..	1	..	..	..	..	..	3	..	..	..	1	..	..	..	..
Moschi	32	20	1	..	..	..	..	..	2	1	..	..	..	4	..	..	..	4
Masindi	36	33	..	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..
Kioaki	3	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kilossa	13	11	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..
Mpapua	15	5	..	..	..	..	..	..	..	8	..	..	..	2	..	..	..	..
Kilimatindi	5	4	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Tabora	30	18	1	..	2	5	2	..	6	1	..	..	..	..	..	..	..	..
Muanza	27	18	..	..	1	1	..	..	5	2	..	..	..	..	..	..	..	..
Bukoba	11	5	..	..	..	3	..	1	2	..	..	..	..	..	..	..	..	..
Irniga	26	24	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..
Langenburg	57	48	..	..	2	1	..	..	..	4	..	..	..	2	..	..	..	..
Ujiji	35	13	..	..	1	4	1	..	13	..	..	..	..	3	..	..	..	..
Total	880	664	16	15	11	18	8	1	46	40	2	3	2	34	6	14	1	4

ACCORDING to Nationality and Calling.

Nationality or Race.	Total.	Government Officials.	Merchants.	Planters.	Private Doctors.	Miners.	Public-house Keepers.	Artisans.	Workmen.	Building Contractors.	Usambara Railway Officials.	Missionaries.	Unemployed.	Huntsmen by Trade.	Wives of—			Nursing Sisters.	Missionary Ladies, &c., and Sisters.	Unmarried.	Children.
															Government Officials.	Merchants, &c.	Missionaries.				
Germans	665	335	39	48	...	4	5	11	2	2	5	63	8	2	21	16	18	22	3	...	38
Austro-Hungarians ...	16	5	2	...	...	...	2	...	...	...	1	2	...	...	1	2	...	...	1	...	...
Italians	15	1	...	1	...	...	...	2	...	2	3	...	3	...	1	1	...	...	...	1	...
Swiss	11	2	...	...	...	...	...	...	...	...	...	6	...	...	1	...	2	...	...	...	...
Dutch	18	...	...	4	...	...	...	..	...	...	...	13	...	...	...	...	...	...	1	...	...
Belgians	3	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...
Luxemburgers	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
French	46	..	..	1	...	...	...	1	...	...	...	30	...	...	1	1	...	...	12	...	...
British	40	...	...	1	1	...	...	...	...	...	...	25	...	...	...	...	6	...	4	...	3
Russians	2	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Danes	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roumanians	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Greeks	34	1	19	...	...	...	4	9	...	1	...	...	...	...	...	...	...	...	...	...	...
Turks	6	2	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syrians, Armenians ...	14	9	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	...	2
Americans	1	1	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...
Without nationality ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	880	360	63	57	1	4	13	24	3	5	10	167	11	2	25	22	26	22	21	1	43

Since July, 1897, Major-General von Liebert has been Governor of German East Africa. He has a large staff of officials under him, who are directly responsible to him, and he in turn is subordinate to the Colonial Department of the Foreign Office. He is also in command of all the troops, but in time of peace hands over the military affairs to Major von Natzmer, the next highest officer. During the absence of the Governor, Major Natzmer presides over the affairs of State, as well as those of the Military Department. **Administration.**

The following are the principal departments:—(1) The Governorship; (2) Military Department; (3) Law Courts Department; (4) Scientific Department; (5) Treasury Department; (6) Audit Department; (7) Medical Department; (8) Post Office Department; (9) Flotilla Department; (10) Customs Department; (11) Public Works Department; (12) Stores and Transport Department.

The total number of officials is as follows:—

	Number.
Military	193
Civil Department	26
„ Local Department	28
Judicial Department	5
Flotilla „	6
Officials not holding an Imperial Commission and liable to dismissal at any moment, and not entitled to a pension ..	100
Coloured officials (Indians, Goanese, Syrians, &c.)	72
Total	430

German East Africa cannot claim to be healthy, but the Government has wisely attempted to counteract the climate by building substantial stone houses and hospitals, as well as by an ample medical staff. **Health. Precautionary methods.**

The illness most prevalent appears to be malaria (hæmaturia), or black-water fever, pernicious and ordinary fever, dysentery, catarrh, consumption, and nervous restlessness. Professor Dr. Koch states that bubonic plague has existed in Uganda for over 100 years, and, as the two countries adjoin each other, it may also exist in the German Colony. All meat sold in the market has first to be examined by the sanitary authorities. Also the towns are supplied with fairly good water by means of wells, which have been carefully sunk. Over each is a pump in order to insure the water not being contaminated. Due care is exercised over the houses of natives, and special care is taken in regard to the military barracks, which so far have shown no sign of unhealthiness. Small-pox breaks out now and again, probably aggravated by natives from Zanzibar, and the Government encourage the natives to be vaccinated, with the result that 60,000 people—mostly belonging to the coast—were vaccinated in 1897-98, the results being favourable. The natives appear to be

fully alive to the advantages of vaccination, and come to the hospital in such numbers as sometimes to cause a dearth of lymph. When inquiries are instituted as to what class and religion these natives belong to, and one finds that they are mostly uneducated and of the Mahomedan religion, it is surprising that so many should avail themselves of vaccination.

In order that there may be an ample supply of lymph, and for the sake of purity, a fresh consignment is brought out by each steamer of the German East Africa line.

A thorough system of drainage is carried on in the houses and streets, as well as the cultivation and irrigation of ground in the neighbourhood of dwelling-houses. It was, however, impossible for lack of funds to complete everything in a satisfactory measure in Mikindani, and this town is at present one of the unhealthiest in German East Africa.

A thorough examination of the water has been made at all places where Europeans are resident. Samples thereof have been sent to the laboratory in Dar-es-Salam for examination, and in cases of bad water the wells have been destroyed. The Government have also begun to sink wells along the Dar-es-Salam-Tabora road, and it is confidently hoped that they will soon be ready for use. Experience seems to have taught the Germans that wells are of no use, as far as health is concerned, unless they are covered over and pumps erected, for the native seems able to drink impure water with impunity, hence their carelessness is great in regard to keeping water pure.

The plague does not appear to have gained ground in any part of the territory. All steamships arriving from India, and which touch at Tanga first, undergo there a careful examination. If they arrive in Dar-es-Salam viâ Zanzibar they need not undergo another examination, that at Zanzibar being considered sufficient.

Since the completion of the new hospital in Dar-es-Salam there has been a marked improvement in the general health. From January 1, 1897, to July 1, 1898, 203 patients were received into this building, whilst 486 natives were attended to in the native hospital—a building erected by money left by a rich Indian named Sewa Hadji.

Tanga has to content itself with a rented building, but, as it is imperative that the town should have a good hospital, steps have been taken to commence the erection of a suitable one. From July 1, 1897, to July 1, 1898, 137 patients were under treatment, and 179 natives also during the same period.

Hospitals have been established at all the stations in the interior, of which the natives take much advantage.

Much appears to have come to light through the scientific study of fever by Geheimrath Professor Dr. Koch. The learned professor told me that he was convinced that hæmaturic fever was the result of quinine poisoning, and that an injection thereof would bring on hæmaturic fever very much quicker than if taken otherwise. He also feels convinced that attacks of malaria are just as severe on the mountains, but it is not caught there, as it

must be brought from the land on the coast. He places the elevation of 4,000 feet as one of immunity against fever.

Hospitals. There are two hospitals in Dar-es-Salam; one is for Europeans, and the better class of Goanese or Indians, the other for Indians, Arabs, and natives.

European hospital. The European Hospital is a large building standing outside the town on the seashore. It was begun in December, 1895, and opened in October, 1897. Here everything is of the latest in the medical world, and it is probably no exaggeration to state that there is no equal to it along the East Coast of Africa. The smallest details have been anticipated, so that there is no difficulty in obtaining the newest in medical stores, surgical instruments, &c. The chief departments are one operating room, bacteriological and microscopical rooms, store room for the whole colony, pharmacy for the hospital, store-room for tinned food, &c., wine, &c., for the hospital, offices, ward, private bedrooms, room for a sick prisoner or imbecile, nursing sisters' apartments, doctors' apartments, and the hospital assistants' apartments; further a kitchen, laundry, fowl-house, disinfecting department, chapel. Each ward, private bedroom, &c., has a bath-room and water closet. They are separated from the sleeping apartment by means of a small passage, as a precaution against impure air.

The following is the staff of hospital:—(1) Principal medical officer, who presides over the whole of the Medical Department of the colony; (2) hospital doctor; (3) two nurses (male); (4) three nurses (belonging to the Berlin Women's Association for Colonial Nursing), one of the nurses is entirely for accouchements, but also helps in the hospital when not otherwise employed; (5) one apothecary; (6) two assistant apothecaries; (7) accountant and clerks; (8) Fifteen native attendants, who are paid so highly that they prefer to remain in the employ of the hospital. This avoids changing and having to teach new attendants what is required of them.

There is also a veterinary surgeon, but he does not belong to the hospital, merely working there for the sake of convenience.

The medical staff is lent by the military department, and in times of great sickness can be increased.

Hospital charges. All Government officials and officers receive free treatment and food. Non-Government officials (merchants shopkeepers, &c.) pay 7 rs. a day for first class, and 5 rs. a day for second class. Wine, &c., is not included in those charges. The doctor has also the option of charging extra for non-Government people, retaining at the same time the extra fee for himself.

The native hospital. The native hospital is a building quite separate from the European one, and will hold about 50 patients. The central part was built by money (10,000 rs.) left by a rich Indian named Sewa Hadji. It has been enlarged on either side, the cost being borne by the Government (about 25,000 rs.). It was begun in 1893 and opened on January 1, 1896.

Into this hospital are received the natives in the employ of the Government, Indians, Arabs, and the non-Government natives.

The first-mentioned receive treatment gratis. The others pay according to their means, say, 1 r. a day; if too poor, gratis. The same may be said as regards those who come for medicine or bandaging, &c. For this Indians and those that are able have to pay from 2 a. to 8 a.

In cases of Indian or native patients having religious scruples in regard to food, the difficulty is met by placing a special kitchen at their disposal, where their friends may cook for them. If they prefer it, permission is also given to have their food prepared for them in their own houses.

The following is the staff of the native hospital:—One doctor, two European assistants, two native assistants, two native assistants sent from the Military Department. The above belong to the Military Department.

The remainder of the colony have to put up with make-shift hospitals. As mentioned above, a hospital is to be built in Tanga. In cases of severe sickness, patients are put on board a steamship and brought to Dar-es-Salam.

Quarantine stations.

There is a quarantine station for Dar-es-Salam on the Inner Makatumbe Island, which is about two sea miles from the entrance to the harbour. This is a waterless coral island, uninhabited and covered with a thick forest. Landing is only possible at the side facing Dar-es-Salam, as there is a sand bank there.

Roads have been made on the island, and spaces cleared for the different departments of the station.

The doctor's house and the buildings for Europeans are of massive coral stone, and great care has been taken in building the rooms to provide for easy disinfection. The roofs are made of makuti leaves (palm), and are burnt after cases of sickness have been removed.

The native house is an open place covered with palm-leaves, and the floor is cemented. The open sides of the building can be covered against wind and weather. After being used it is burnt, the building being very cheap.

Communication with the mainland is kept up by means of a flagstaff in front of the doctor's house. In times of sickness the island coast is patrolled by a steam pinnace. A doctor and nurse are also sent to the island. When there is no sickness a native looks after the station. Cisterns have been made in two places, and every two months the water is pumped out and fresh poured in. The station was built during the first half of 1899, and has as yet not been made use of.

A similar quarantine station is built on the Toten Insel (Death Island) in Tanga Harbour.

Posts and telegraphs.

The first post-offices were erected on October 4, 1890, in Dar-es-Salam and Bagamoyo, and as it was expected that both of these places would grow into great importance, regular postal officials were sent out for each office. In 1891 offices were opened in Tanga and Lindi, in 1892 in Kilwa, Pangani, and Sadani, in 1894 in Mohorro and Mikindani.

In 1890 a cable was laid between Zanzibar and Dar-es-Salam,

viâ Bagamoyo. It is the property of the Eastern Telegraph Company, who receive an annual rent of 5,000*l.* from the German Government for the sole use of the line, the latter having the option to purchase it after 20 years. In 1892 an overland wire from Bagamoyo-Tanga was erected, thereby connecting the northern post-offices of Sadani, Pangani, and Tanga. Mohorro and Kilwa were connected in 1894 by a south line from Dar-es-Salam, which in 1897 was continued over Lindi to Mikindana. But still telegrams going north from the south and vice versâ had to be re-telegraphed from Dar-es-Salam and Bagamoyo, and for the sake of expedition an overhead wire was constructed in 1898, placing Dar-es-Salam and Bagamoyo in direct communication.

In 1895 post-offices were opened in the interior, so that letters can be sent to Bukoba, Kilimatinde, Kilossa, Langenburg, Marangu, Mochi, Mpapua, Muanza, Tabora, and Ujiji. In Songea and Wiedhaven (Lake Nyassa) post-offices are also to be established.

Conditions for candidates.

No European is eligible for postal service in East Africa without undergoing a thorough medical examination. After which the candidate has to pass an examination in Swahili at the Berlin School for Oriental languages. A fair knowledge of Arabic and Indian characters is also required.

Letters are carried throughout the territory by native postmen. They are despatched as follows:—

1. *Dar-es-Salam* to Mpapua, Kilimatinde, Tabora, Muanza, and Bukoba, with branches from Tabora to Ujiji, two to three times a month, the time occupied in getting to the various places being—Mpapua, 14 days; Tabora, 31 days; Muanza, 40 days; Bukoba, 57 days; Ujiji, 48 days.
2. *Dar-es-Salam* to Kilossa and Iringa, two to three times a month; Kilossa, 11 days; Iringa, 19 days.
3. *Tanga* to Wilhelmshafen, Mochi, and Marangu, once a fortnight; Wilhelmsthal, 3 days; Mochi, 12 days; Marungu, 13 days.
4. *Kilwa* to Songea and Langenburg, once a fortnight; Songea, 23 days; Langenburg, 33 days.
5. *Dar-es-Salam* to Bagamoyo, once a day.
6. Bagamoyo to Sadani, twice a week.
7. Tanga to Pangani, about once a week.
8. Kilwa to Mohorro, once a week.
9. Lindi to Mikindani, about once a week.

Since the beginning of 1898 the mail steamers of the German East Africa line bring the mails outwards and homewards in 14 days. Other mails are carried by the British India line and the Messageries Maritimes, arriving in Zanzibar once a month. The coast service is carried out by the branch line of the German East Africa Company, which takes mails twice a month to all the post-offices except Mohorro, to which must be added the German Government steamers, which bear mails three to four times a month on their voyages up and down the coast.

The receipt and despatch of letters increase year by year. In

1896–97 the total number of letters, newspapers, &c., reached the sum of 317,123, and 381,186 in 1897–98.

No pains are spared to make the most of native intellect. A really good example of what a native can attain to is to be seen in one named Juma, of the Tanga post-office, also with experience dating from 1891. Not only can he read and write German, but he is also able to receive and transmit telegraphic messages.

Agriculture. The method of cultivation pursued by the natives is to burn the tall grass, &c., remove the trees, and then till the ground. The system of manuring is not practised by them; one reason probably being that they do not possess much cattle. When, therefore, the ground has all been used up, the whole village removes to another place and recommences operations. The Government have tried to instil a more intelligent mode of agriculture, but success has not attended their efforts. The usual crops grown by the natives are: rice, millet, maize, sesame, beans, various roots, sweet potatoes, tomatoes, cucumbers, pumpkins, &c. To which may be added, bananas, papaws, melons, and other fruits.

Much harm is caused by locusts, which appear now and then, and render whole districts leafless. In 1895 they seemed to have abated, although some made their appearance in Bagamoyo. Again, in December, 1897, they appeared first of all in the southern districts, after which they reached Dar-es-Salam in January. Bagamoyo and Pangani seemed to have suffered most.

Experiments were instituted in the growing of oil plants, but, owing to the slackness of the natives, no results were obtainable. But it is to be hoped that hut taxes will force the native to put his shoulder to the wheel, as he is allowed to pay the tax in kind.

The influx of natives to the coast towns increases year by year, they abandon the fields to find that their living is gained in an easier manner, while at the same time they are always able to have a surplus of money at the end of the month, which, however, is not often found to be brought forward to next month's account, the love of spending being deeply ingrained in the black race.

There was a very rainy season in 1896–97, whilst 1898 was conspicuous for the severe drought, causing the deaths of numbers of natives through famine.

Cattle. A large cattle farm has been established in Mafia, the island being a favourable place for cattle. It appears that the Texas or Surra fever is endemic there, but the animals living there are immune, the reason probably being that they were attacked by the fever in a mild form when young. Cattle brought to the island soon get ill, and some die. It has been found that they thrive best when allowed to seek out their own pasture.

Dr. Koch, however, who studied the question in East Africa, had specimens of the cattle brought to him within a certain zone of the coast from the interior, but which were not allowed to return again. As a result of his investigations it appears possible by taking certain precautions to prevent the disease spreading. Some

of the ticks found on cattle on the coast were taken into the interior, and the offspring of these ticks were put on healthy animals. The result was a mild form of the sickness, and the beasts so attacked were rendered immune.

The rearing of pigs and fowls is also in a satisfactory state.

There is a yard in Dar-es-Salam in which cattle are housed. They are kept there for the supply of milk to the European population, but here again Texas fever works great havoc; Kurasini and Magogoni lying close by, seem to be fairly free from it.

Two good stables have been built for the rearing of half-Muscat donkeys. In the one are 12 good Muscat stallions and mares, and a horse, and in the other there are 44 Masai mares, while one Muscat stallion and 32 Massai mares are in Pangani.

Owing to the increase of cattle, especially in Bagamoyo and Saadani, a tax has again been imposed on them since 1896.

During 1897–98 it was expected that there would be an increase of cattle. Cattle were given to the great chiefs on the condition that upon the number being doubled every further one should belong to them; but Texas fever or Surra fever put a stop to this.

Plantations.

There are a number of plantations, of which the principal ones are in Tanga, Bondei, Eastern and Western Usambara. On these plantations Manyeme, Wasukuma, and Eastern Asiatics are largely employed.

At Mochi a company has been formed for the purpose of zebra and ostrich farming, but the outlook does not appear to be very bright. As a rule most of the plantations grow coffee, some sugar and tea. The cultivation of cotton does not seem to gain much ground. Many plantations grow tobacco, but it has been found that it does not burn well, the salt in the ground having something to do with it. Experiments are now being made to counteract this.

In 1897–98, 30,000 sisal-hemp plants were experimented on in Kikogwe. This plant does not suffer from wind and weather, and the results promise to be good.

Experiments in vegetables were tried in Saadani. They germinated, but often afterwards were eaten by insects, or remained stationary.

In Kurasini there is a plantation; 15,000 agaves have already been planted. The result promises well.

There are in all 10 plantation companies in the Protectorate, owning 23 plantations, they are divided as follows:—Near Tanga and Moa, 8 (seven grow cocoa-palms and one vanilla); Bondei (Liberian coffee), 1; Usambara Mountains, 14.

Forestry.

There is an abundant supply of wood in the country, and great pains are taken to ascertain the different kinds of trees to be found. Foresters have been sent to Kilossa, Muanza, Langenburg, and Western Usambara. All felling of trees has been forbidden in the Rufigi Delta, and three foresters have been sent to look after the trees. Another forester looks after the trees in the Pugu Mountains.

Mining. A large vein of gold has been discovered near Lake Victoria Nyanza. A thorough examination of the ground is being carried out. The opinion is expressed that the gold vein runs into Uganda, but a great part of it is said to be under the lake.

Coal has also been discovered near Langenburg and Lindi, but until there are railways the transport of gold and coal will be a difficult matter.

Mother-of-pearl fishery. There is said to be mother-of-pearl, &c., near Mafia Island, but up to now the results are not known.

Meteorological observations. Meteorological observations are regularly made in Dar-es-Salam, and the other towns along the coast as well as at Ujiji and Kilossa. Magnetic observations are taken at Dar-es-Salam.

Shipping. It is very difficult to obtain statistics of the shipping of German East Africa as no particular account of it is kept. As a rule the steamers of the German East Africa line arrive from the north and south about once a fortnight, and the branch service keeps the coast towns, India and Zanzibar, in touch by calling there once a fortnight. The line receives a subsidy of 45,000*l.* a year, and is bound to remain in Tanga and Dar-es-Salam not less than 24 hours. The contract soon runs out, and I hear that more stringent regulations are to be put in force if the line desires the subsidy to be continued. At present they make Zanzibar their chief port of call. One condition of the subsidy will be that more modern steamships are to be built.

The Government have a small flotilla of well-built boats. There are at present about 13 of them, as follows:—

Kaiser Wilhelm II, 497 tons gross, 56 tons register (in course of construction).*

Rufigi, 104 tons gross, 56 tons register.

Rovuma, 104 tons gross, 56 tons register.

Max, 75 tons gross, 50 tons register (to be sold).†

Kingani and *Wami*, customs cruisers.

Hermann von Wissmann, on Lake Nyassa.

Hedwig von Wissmann, on Lake Tanganyika (in course of construction).*

One aluminium pinnace.

Three pinnaces.

Ulanga, stern wheeler on Rufigi River—at present cannot get higher than Kipo, 200 kiloms. from the coast.

München, coal boat—formerly a passenger, &c., boat.

Whale boat, on Lake Victoria.

Equally difficult is it to obtain statistics of the dhow shipping. As far as I can gather the total dhow shipping comes to about 8,600 a year, of which about 1,200 are British and 500 under British protection.

It is a rare thing for any English or Sultan's steamer to anchor in the German ports.

A workshop has been erected for repairing the vessels of the flotilla. But it is by no means sufficient for the demand.

* Since writing the above, finished.

† Since writing the above, sold to an Indian.

There are very fine landing stages at Dar-es-Salam, and landing is possible at all states of the tide.

A dock is to be built in Dar-es-Salam by the middle of 1900. Half of the money has been voted for it and the other half will also be granted. The dock is being constructed in Germany, and, as above mentioned, will be ready in about 15 months' time, a contract having been made to that effect. It will hold vessels of 3,000 tons, and can be sub-divided for vessels of 1,800 and 1,200 tons.

Negotiations between the Imperial Government and the Messageries Maritime Steamship Company, which thought of making Tanga and Dar-es-Salam ports of call, have fallen through; but there is a rumour of the line having a branch coast service to visit German ports.

I also hear that the Woermann and German East African line will be amalgamated next year and go right round Africa.

Lighthouses.

There are five lighthouses along the coast, viz. :—

Ulenge Lighthouse.—A four-sided white tower on Ulenge Island, 25 metres high, with keeper's quarters adjoining it facing the sea. It flashes two white lights, each lasting 1·3 second, with 1·5 seconds interval between them, after which there is darkness lasting for 6·2 seconds. In clear weather the light can be seen 15 sea-miles off.

Makatumbe Lighthouse.—A black and white horizontally-painted tower, 29 metres above high water-mark, on the outer Makatumbe Island, with keeper's quarters adjoining it facing the sea. It shows a light every 30 seconds, which lasts 5·7 seconds, after which there is an eclipse for 24·3 seconds. In clear weather this light can be seen 15 sea-miles off.

Ras Kansi Lighthouse.—A white four-cornered tower on Ras Kansi Island, 9·5 metres in height and 19 metres above high-water mark. This is a steady non-flashing light, and is only visible from 132° (south-east ¼ east) over west to 36° (north-east ¾ north) and at a distance of 14 sea-miles.

Ras Makumbi Lighthouse.—A four-sided tower painted white and red horizontally, 30 metres high, with lighthouse-keeper's quarters on both sides. It stands 31 metres above high-water mark, and shows every 15 seconds alternately red and white non-flashing lights, which last 5·7 seconds, after which there is an eclipse lasting for 9·3 seconds. In clear weather this light can be seen 16 sea-miles off.

Fangore Lighthouse.—A four-sided white tower on Fangore Island 14 metres high, having keeper's quarters adjoining it facing the sea. At a height of 20 metres above high-water mark it shows a steady white light, visible in clear weather at a distance of 14 sea-miles away and within a radius of 270° fixed by observation, found to be from 202·5° (south-south-west) over west, north, and east to 112·5° (east-south-east).

Beacons.

Pangani.—Two triangular-shaped beacons stand on the right of the entrance to the harbour. Vessels should first make towards the sailing-direction buoy, and having passed it both beacons should

be brought in line. A wall built on the high ground between Ras Kikogwe and Ras Muheza, with a board in front of it, marks the beginning and end of the bar. The bar begins when the board is covered by the west end and it finishes when covered by the east end. When the bar is passed vessels should turn towards the right half of the river and continue in that direction until the wreck of the *Vulcan* lies athwart of the vessel. The vessel should then steer into the middle of the river up to the anchorage.

Dar-es-Salam.—An obelisk stands on Ras Rongoni and a triangular beacon on a rock jutting out from the land. The direction of both in which Buoy "I" lies leads through the passage of Buoy "A" to Buoy "I." It is, however, only of use for small craft, which require to pass on the west side of the Outer Daphne Reef.

There is a white wall on the southern bank between Buoy "B" and "C." The lines of connection of the edge thereof and a white stake touch upon the border of the "Mittelgrund."* As soon as the stake comes in line with the western edge of the wall the "Mittelgrund" has been passed, and vessels should then without delay turn round towards the entrance of the harbour.

Lindi.—There is a white pillar and beacon in Lindi, which with Buoy "A" makes a straight line (magnetic direction west by south $\frac{3}{4}$ south). This line leads at middle low water over a depth of not less than $6\frac{1}{4}$ metres.

* The part between buoys "B" and "C," which at low water has a depth of 5·5 metres.

IST OF BUOYS.

Number.	Position.	Spire Buoys.		Conical Buoys.			Round Buoys.	Anchorage Buoys.	Small Buoys.	Depth of Water.	Description—Remarks.
		1st Class.	2nd Class.	1st Class.	2nd Class.	3rd Class.					
										Metres.	
1	Moa	...	...	...	...	1	...	...	...	15	Black
2	,, ...	...	...	...	...	...	...	...	1	7	Red
3	Tanga	...	...	...	...	...	...	1	...	7	Red
4	Fungu	1	...	...	...	...	...	...	...	12	Red, with top mark "A," and in white "A" / Tanga
5	North-east end of	...	...	1	...	...	...	...	...	20	Black, with "1" / Tanga in white
6	South end of	...	1	...	...	...	...	...	...	20	Red, with white top mark "B," and "B" / Tanga in white
7	North-west of Ras Kasone	...	...	...	1	...	...	...	...	8	Black, with "2" / Tanga in white
8	,, ,, ,, ...	...	1	...	...	...	...	...	...	8	Red, with top mark "C" and "C" / Tanga in white
9	,, ,, ,, ...	...	1	..	..	...	...	...	...	7	Red and black, with a black cross lying flat as top mark, and "TA" in white
10	North of Rocky Island	...	...	...	1	...	...	...	...	19	Black, with "1" / y in white
11	,, ,, ...	...	1	...	...	...	...	...	..	6·5	Black and white, top mark a black drum "Dixon" / Tg in white
12	South Head Reef	...	1	...	...	...	...	...	...	20	White, with two triangles as top mark, and pointing downwards. "South Hd" in white
13	Pangani	...	...	...	1	...	...	..	...	3·5	Red and black, with black "P" as top mark, "PANGANI" in white
14	,, ...	...	...	...	...	1	...	...	...	4	Black
15	Kipumbwi	...	1	...	...	...	...	...	...	22	White, two triangles pointing towards each other as a topmark, "KPMBW" in black
16	Mwamba	...	1	...	...	...	...	...	..	22	White, two triangles with the bases towards one another, "Aleck" in black
17	Mkwadja Shallow	...	1	...	...	...	...	...	..	13	White, two triangles with the points downwards as topmark
18	Saadani...	...	...	...	...	...	...	...	1	4	Red, small flag as topmark
19	Wami Shallow	1	...	...	...	...	...	...	...	26	White, two black triangles, the points of which are apart, as topmark, "Wami" in black
20	Windi Shallow	...	1	...	...	...	...	...	...	18	White, two black triangles, the points of which are towards each other, "Windi" in black

NOTE.—Spire-shaped buoys are on the starboard side; conical-shaped buoys are on the port side.

List of Buoys—continued.

Number.	Position.	Spire Buoys.		Conical Buoys.			Round Buoys.	Anchorage Buoys.	Small Buoys.	Depth of Water.	Description—Remarks.
		1st Class.	2nd Class.	1st Class.	2nd Class.	3rd Class.					
										Metres.	
21	Fungu Miko	...	1	...	...	...	...	...	...	26	White, two black triangles the points of which are apart, "Miko" in black
22	Bagamoyo	...	...	...	...	...	...	...	1	4	Red, with a flag as topmark
23	Kebandahodi Bank	...	1	...	...	...	...	...	...	16	White, two black triangles the points of which are upwards, "Bagamoyo" in black
24	Kitapumbe Reef	...	1	...	...	...	...	...	...	16	White, two black triangles the points of which are apart, "KITAB" in black
25	Dar-es-Salam Daphne Reef ...	...	1	...	...	...	...	...	...	10	White, two black triangles the points of which are downwards, "Daphne" in black
26	Hammond Rock	...	1	...	...	...	...	...	...	16	" " " upwards, "Hammond" in black
27	Entrance to Dar-es-Salam Harbour	...	1	...	...	...	...	...	...	10	Red, white top mark "A," "Dr s m" in white
28	" " "	...	1	...	...	...	...	...	...	11	" " " "B," " "
29	" " "	...	1	...	...	...	...	...	...	9	" " " "C," " "
30	North of Ras Gomani	...	...	...	1	...	...	...	...	12	Black, white mark "1," "Dr s m" underneath
31	Dar-es-Salam Harbour	...	...	...	...	...	...	...	1	19	" " "2," " "
32	" "	...	...	...	1	...	...	...	...	11·5	" " "3," " "
33	" "	...	...	...	...	...	...	...	1	13	" " "4," " "
34	" "	...	...	...	...	...	...	1	...	9	Red
35	Mafia Channel (Nyororo Island) ...	...	...	...	1	...	...	...	...	22	Black, "1" / Mafia in white
36	Simba Uranga	...	...	...	1	...	...	...	...	2·5	Black and red top mark, black cross lying flat
37	Fili Reef	...	1*	...	...	...	...	...	...	20	Red, white top mark "A," "A" / Mafia in white
38	Wimi	...	1*	...	...	...	...	...	...	16	" " " "B," "B" / Mafia "
39	Saadani Bank...	...	...	...	1	...	...	...	...	9	Black, "2" / Mafia
40	Al Hadjiri Reef	...	...	...	1	...	...	...	...	14	" "3" / Mafia
41	Funga Marima	...	1*	...	...	...	...	...	...	12	Red, white top mark "C" "C" / Mafia
42	Chole	...	...	...	...	...	...	...	3	...	
43	Mohorro	...	...	...	...	...	...	...	1	...	

44	Ras Kidmani ...	...	...	...	...	...	1	...	...	...	...	20	Black, "4" / Mafa in white
45	Chocha Reef ...	...	...	...	1*	...	...	...	...	...	...	20	Red top mark "D" "D" / Mafa
46	Mschanzi Reef	...	...	...	...	...	1	...	...	...	...	20	Black "5" / Mafa
47	Palasi	...	...	...	...	...	1	...	...	...	...	24	" "6" / Mafa
48	Kilwa	...	...	...	...	...	...	...	...	...	1	6·4	
49	Lindi	...	...	...	1	...	...	...	...	...	...	6·2	Red, white top mark "A" "A" / Linde in white
50	"	...	...	...	1*	...	...	...	...	...	...	8	" "B" "B" / Linde
51	"	...	...	...	1	...	...	...	...	...	...	6	" "C" "C" / Linde
52	Mikindani starboard...	...	...	...	1	...	...	...	...	...	...	9·5	" "A" "A" / MJ. K
53	East corner of Pemba Reef...	...	...	...	1	...	...	...	...	...	...	9·5	" "B" "B" / MJ. K
54	Mikindani (port side)	...	...	...	...	...	1	...	...	...	...	10	Black "2" / MJ. K in white
55	Mwamba Dadi ...	...	...	...	...	...	1	...	...	...	...	8	" "2" / MJ. K "
56	Kilongwe Bay ...	...	...	...	...	...	...	...	1	...	...	20	Red and black (marked perpendicularly) "K1" top mark, cross lying flat
57	" " ...	...	...	...	...	1	...	...	...	...	...	5	Red "K 2"
58	" " ...	...	...	...	...	1	...	...	...	...	...	5	" "K 3"
	Total ...	...	...	...	2	28	1	14	2	1	2	10	...				

* To be removed.

NOTE.—Spire-shaped buoys are on the starboard side; conical-shaped buoys are on the port side.

Roads. Strenuous efforts are being made to create a thorough system of roads throughout the length and breadth of the country. All available money at the different stations is devoted towards making the existing roads as serviceable as possible. The various chiefs throughout the territory are bound to keep the roads in good order. In cases where a new road has to be built, the villages owing taxes have to provide labourers until the debt is paid off.

The following are the principal roads:—

Tanga.—Massinde–Kilimanjaro–Lake Victoria.

Dar-es-Salam and Bagamoyo.—Kilossa–Mpapua–Kilimatindi–Tabora–Ujiji.

Kilwa and Lindi.—Songea–Iringa–Langenburg (Lake Nyassa), Tanga–Amboni–Gombelo–Bunti.

Tanga–Mukulumusi.

Amboni–Muva.

Pa Bori–Kerenge–Lumgera Valley.

Muhesa–Mruasi–Korogwe.

Muhega–Lungusa–Derema.

Muhesa–Kumba–Naguru.

Saadani–Tabora–Lake Victoria.

Bagamoyo–Mtonifähre–Mafua–Geringeri–Kilossa–Mpapua–Tabora–(Muanza).

Bagamoyo–Mtonifähre–Rossaki–Mamboya–Mpapua.

Tabora (Muanza).

Bagamoyo–Mtonifähre–Mandera–Nguru.

Bagamoyo–Mtonifähre–Rossaks–Bayuni–Nguru.

Bagamoyo–Windifähre–Karraboko–Kiwansi–Mandera–Nguru.

Bagamoyo–Windifähre–Saadani.

Bagamoyo–Kaule–Bueni–Dar-es-Salam.

Bagamoyo–Kitopeni–Hinga–Dar-es-Salam.

Bagamoyo–Kitopeni–Yombo–Mandimola–Kingani–Lindi–Masasi–Songea.

Lindi–Mchinga and further viâ Kisiwero–Kilwa in a northern direction, and to Sudi–Mikindani in a southern direction.

Railways. The Usambara Railway which runs a short distance inland was taken over from the Usambara Railway Company in 1898 by the Government. At present its terminus is Muhesa Station, about 41 kiloms. from Tanga. Two to three times a week a train arrives and departs. A project is on foot to extend the railway 45 kiloms. further on to Korogwe.

Transport. Transport in German East Africa is beset with the same difficulties as in British East Africa. Porters are principally relied upon, and experiments are being tried with mules. It has been found that the latter withstand tsetse fly better than horses or donkeys. Each porter receives a number by which he can be recognised and controlled, as also a small advance on his pay. He receives no further money until the fulfilment of his task. The journeys usually occupy from eight to 90 days, according to the distance. The pay is from 10*s.* to 2*l.* 1*s.* for porters, and about 9*s.* to 2*l.* for the men entrusted with looking after the caravan.

Desertions occur rarely, and are usually caused by the weight or shape of the load, the particular tribe to which the offender belongs, or the distance to be travelled.

The principal place of departure for caravans is Dar-es-Salam. Loads from Kilwa to Langenburg are usually taken by sea and up the River Shire (British Central Africa).

Customs. Imports and exports.

The imports and exports as well as the customs receipts increase year by year. The imports are always a great deal higher than exports, and the customs receipts show that the colony depends much upon imports for revenue.

The year 1896 showed about 1,000*l.* less in sugar receipts, and the ravages wrought by locusts was an additional strain. The export of cocoanuts decreased, while that of copra increased. Earth nuts were exported in such small amounts as to render that article not worth mentioning. The tables respecting raw rubber and weaving grass show to what extent the natives were driven by hunger.

Ivory and other tusks have decreased considerably, the reason assigned being that the export from the Congo takes place on the west coast, while that from Uganda goes through Mombasa.

The import and export tables for 1898 show what the various countries contributed to German East Africa. A very noticeable fact is the part played by Zanzibar, which imports into German East Africa more than three times as much as does Germany, while India contributes twice as much as Great Britain. In exports Zanzibar receives even more attention inasmuch as the amount exported is four and a-half times as much as to Germany, while Great Britain receives four and three-quarter times more than India.

On the whole there has been from 1892–97 an increase in imports in the following: clothing, leatherware, European building wood, cement, petroleum, soap, spirits, wine, beer, sugar, coffee, butter, fruit and vegetables, and meat, while there is a notable decrease in cotton, rice, and millet.

An increase in exports of maize, millet, sesame, chiroko, raw caoutchouc, tobacco, copra, copal, and a decrease in rice, cocoanuts, weaving grass, ivory, and native timber.

In most of the goods not mentioned there has been much fluctuation, perhaps a rise in one or two years, after which a fall and again a rise, and so on

IMPORTS.

Goods.	July 1 to June 30.			July to June.	January 1 to December 31.	
	1892.	1893.	1894.	1895.	1896.	1897.
	£	£	£	£	£	£
Cotton and wares...	113,100	180,990	173,280	160,940	216,530*	133,450*
Clothing	1,160	3,210	2,960	1,540	11,470	14,150
Japanese and Chinese beads ...	1,410	770	390	710	1,060	1,480
Other beads	1,410	3,990	3,860	2,540	5,160	5,260
Leatherware	1,410	2,060	1,280	1,800	1,900	1,950
Machinery, agricultural... ...	...	3,470	130	} 260	1,300	1,480
,, industrial	540	1,550	640			
Unwrought iron, &c.	1,290	1,030	2,570	4,500	1,390	1,960
Iron plates...	640	640	4,370	3,090	910	170
Wire, nails, screws, &c.... ...	770	2,060	4,240	1,410	2,030	3,200
Tools	1,800	3,600	7,710	5,910	7,380	6,470
European building wood ...	1,160	1,800	3,470	2,440	3,390	2,400
Cement	1,540	1,030	2,310	1,670	700	2,040
Petroleum	4,370	5,400	6,680	7,070	10,590	9,000
Gunpowder...	260	12,080	60	440	710	450
Soap	2,700	3,600	3,470	5,270	4,780	4,910
Spirits	2,320†	3,430	3,840	5,620	6,320	5,490
Wine...	3,470	5,140	9,510	13,240	10,100	8,220
Beer	5,020	4,240	6,560	8,610	6,260	6,330
Sugar	2,830	3,860	3,980	5,140	5,390	4,070
Coffee, tea, &c.	900	1,280	1,410	2,060	2,350	2,220
Butter, milk, &c.	5,530	8,360	9,000	9,278	9,000	9,210
Flour	3,210	4,110	4,760	6,430	5,010	3,470
Fruit and vegetables	3,020†	5,860	4,450	6,720	7,400	6,350
Meat...	2,380†	3,310	4,010	8,970	9,600	12,590
Rice	6,680	9,130	28,150	68,510	38,020	28,170
Maize	520	390	900	2,700	380	60
Millet, &c.	640	900	2,570	9,510	1,490	360
Other grain	260	260	510	770	470	600

* July to June. † April to December.

EXPORTS.

Goods.	July 1 to June 30.			July to June.	January 1 to December 31.	
	1892.	1893.	1894.	1895.	1896.	1897.
	£	£	£	£	£	£
Rice, paddy	4,240	4,500	1,160	10	30	70
,, husked	7,710	15,550	2,060	40	10	30
Maize, &c.	770	900	70	60	470	1,250
Millet, &c.	7,200	10,800	6,810	260	7,000	21,290
Sesame	6,040	5,660	10,280	8,740	5,400	11,220
Chiroko	390	510	260	1,160	350	830
Cocoanuts	3,990	4,630	5,660	6,890	4,340	1,980
Raw caoutchouc	27,120	29,820	31,750	41,260	43,600	51,430
Weaving grass, &c.	1,160	1,670	3,090	3,860	3,090	2,850
Tobacco	4,760	3,860	12,980	1,800	3,590	4,820
Copra	3,720†	6,970	3,200	2,470	5,030	9,160
Copal	13,740†	11,620	9,840	7,390	8,520	8,310
Ivory	100,680	100,390	112,220	88,950	82,200	66,910
Hippopotamus teeth	770	1,290	1,540	1,930	2,840	2,010
Rhinoceros horns...	1,160	1,540	2,060	2,960	4,570	2,940
Native timber	1,160	2,570	3,210	3,340	350	450
Cattle	1,540	1,670	260	390	2,820	1,040

† April to December.

IMPORTS, January 1 to December 31, 1898.

Number.	Wares.	Value.					* Total Value.
		Germany.	Great Britain.	Zanzibar.	India.	Other Countries.	
		£	£	£	£	£	£
1	Raw cotton	48	...	149	49	3	249
2	All kinds of cotton wares ...	23,369	2,257	183,840	47,069	7,505	264,040
3	Hemp, jute, flax, and other vegetable fibres	105	1	144	9	...	259
4	Wares made thereof	1,997	16	3,062	649	67	5,811
5	Silk, half-silk, and wares thereof	38	...	1,663	351	226	2,278
6	Raw cleaned and uncleaned wool	...	...	50	...	1	51
7	Wares thereof	770	80	2,795	161	131	3,937
8	Paper, cardboard, paper and cardboard wares, books, printed matter and pictures	1,558	92	1,884	126	121	3,781
9	Hides, furs, feathers, hair cleaned or uncleaned	30	...	86	1	8	125
10	Wares thereof, *i.e.*, leather, saddlery, bootmakers' brushes, &c.	1,313	111	1,401	270	35	3,130
11	Shells of all kinds	2	1	117	5	3	128
12	Precious metals and wares thereof, including watches, &c.	284	7	994	65	65	1,415
13	Unwrought iron, railway rails, rods, &c.	710	3	499	64	139	1,415
14	Firearms	759	3	114	...	16	892
15	All ironwork not mentioned above	13,982	430	5,284	727	1,530	21,953
16	All other non-precious metals, *i.e.*, copper, tin, zinc and wares thereof, clocks	3,815	150	4,666	332	3,244	12,207
17	Musical, astronomical and optical instruments	1,175	8	392	15	2	1,582
18	Sea and river craft, railway carriages and bicycles	789	20	841	239	37	1,926
19	Ore, earth, stones and stone-wares, minerals	11,659	38	2,389	166	274	14,526
20	Petroleum	...	...	4,394	48	514	4,966
21	All other mineral oils, *i.e.*, tar, pitch, turpentine, &c.	1,105	2	1,297	17	...	2,421
22	Raw caoutchouc	...	...	...	...	...	...
23	,, copal, cleaned and uncleaned	...	...	1	...	...	1
24	,, ivory	...	...	...	...	...	...
25	,, hippopotamus teeth... ...	...	...	...	...	...	...
26	,, Wild boar tusks and other tusks, bones, &c.... ...	...	...	...	...	...	...
27	,, horns	2	...	1	...	...	3
28	Gunpowder, cartridges, &c. ...	612	5	64	...	7	688
29	All other explosives	358	...	614	...	81	1,053
30	Glass, porcelain and earthenware goods	2,039	177	8,719	402	1,127	12,464
31	Fancy goods	137	...	230	23	4	394
32	Building, fancy, &c., wood ...	1,411	1	1,300	37	229	2,978
33	Wooden wares, including furniture, basket work, &c.	2,599	15	3,191	840	51	6,696
34	Spirits	4,271	345	2,242	4	444	7,306
35	Beer, wine, alcohols, mineral waters	12,929	18	4,679	5	1,170	18,801
36	Rice, paddy and other	...	...	52,816	40,763	10	93,589
37	Grain of all kinds	314	...	4,791	1,241	447	6,793
38	Earth nuts	...	...	110	...	13	123
39	Cocoanuts	...	...	439	...	35	474
40	Copra	...	...	...	...	...	...
41	Sesame	...	...	...	...	...	...
42	Vegetable oil, and fat of all kinds; wax	843	145	2,818	50	222	4,078
43	Sugar and sugar cane, syrup, molasses	1,174	44	4,964	173	161	6,516
44	Spices of all kinds...	210	4	2,676	701	22	3,613
45	Coffee	192	3	789	...	131	1,115
46	Tea	114	7	642	56	8	827
47	Cocoa	131	2	70	1	20	224
48	Raw tobacco	294	...	157	...	99	550
49	Manufactured tobacco	3,066	38	3,164	63	893	7,224
50	Opium, &c....	...	...	402	30	102	534
51	Groceries of all kinds	12,769	395	28,428	2,589	2,930	47,111
52	Chemicals, paint, perfumes, drugs, &c....	2,710	88	2,883	305	131	6,117
53	Dyes...	3	...	144	28	...	175
54	Seeds and plants, &c.	95	30	43	7	770	945
55	Live animals	15	...	1,282	62	778	2,087
56	Miscellaneous	614	88	661	16	73	1,452
	Total	110,410	4,624	344,341	97,759	23,879	581,013

EXPORTS, January 1 to December 31, 1898.

Number.	Wares.	Value.					Total Value.
		Germany.	Great Britain.	Zanzibar.	India.	Other Countries.	
		£	£	£	£	£	£
1	Raw cotton	3	...	45	...	...	48
2	All kinds of cotton wares ...	5	...	195	...	...	200
3	Hemp, jute, flax, and other vegetable fibres	23	...	509	...	2	534
4	Wares made thereof	45	39	3,206	8	19	3,316
5	Silk, half-silk, and wares thereof	...	...	73	...	...	73
6	Raw, cleaned, and uncleaned wool	...	...	...	...	...	...
7	Ware thereof	4	...	...	...	...	4
8	Paper, cardboard, paper and cardboard wares, books, printed matter, pictures	...	...	...	...	...	...
9	Hides, furs, feathers, hair; cleaned or uncleaned	286	17	2,750	...	45	3,098
10	Wares thereof, *i.e.*, leather, saddlery, bootmakers' brushes, &c.	20	...	10	...	...	30
11	Shells of all kinds	11	47	1,546	221	10	1,835
12	Precious metal and wares thereof, including watches, &c.	86	...	...	...	...	86
13	Unwrought iron, railway rails, rods, &c.	...	...	...	...	...	...
14	Firearms	...	...	...	...	...	...
15	All ironwork not mentioned above	166	...	113	...	11	290
16	All other non-precious metals, *i.e.*, copper, tin, zinc, &c., and wares thereof; clocks	24	...	3	...	...	27
17	Musical, astronomical, and optical instruments	...	...	...	...	...	...
18	Sea and river craft, railway carriages, and bicycles	...	...	1	...	...	1
19	Ore, earth, stone and stonewares, minerals	2	...	14	...	...	16
20	Petroleum	...	...	...	...	...	...
21	All other mineral oils, *i.e.*, tar, pitch, turpentine, &c.	133	...	2	...	...	135
22	Raw caoutchouc	22,654	3,663	21,238	...	...	47,555
23	,, copal, cleaned and uncleaned	110	...	13,695	...	23	13,828
24	Raw ivory	190	...	62,758	359	38	63,345
25	,, hippopotamus teeth ...	42	...	1,795	2	...	1,839
26	,, wild boar tusks and other tusks, bones, &c.	38	...	208	...	7	253
27	Raw horns	176	...	2,437	...	16	2,629
28	Gunpowder, cartridges, &c. ...	...	...	...	...	...	...
29	All other explosives	...	...	...	...	...	...
30	Glass, porcelain, and earthenware goods	4	...	158	...	...	162
31	Fancy goods	...	...	...	...	...	...
32	Building, fancy, &c., wood ...	249	...	4,636	8	231	5,124
33	Wooden wares, including furniture, basket work, &c.	53	11	593	...	18	675
34	Spirits	...	...	...	...	...	...
35	Beer, wine, alcohols, mineral water	...	...	32	...	...	32
36	Rice, paddy and other	...	...	15	...	...	15
37	Grain of all kinds	1	...	2,111	...	688	2,800
38	Earth nuts	...	...	693	...	...	693
39	Cocoanuts	...	...	1,250	401	647	2,298
40	Copra	94	...	15,210	...	133	15,437
41	Sesame	...	...	6,738	7	5,244	11,989
42	Vegetable oil and fat of all kinds; wax	2,335	922	4,638	...	...	7,895
43	Sugar and sugar cane, syrup, molasses	...	...	2,945	...	1,980	4,925
44	Spices of all kinds	83	...	14	...	...	97
45	Coffee	11,207	...	123	...	465	11,795
46	Tea	...	...	...	...	...	...
47	Cocoa	...	...	...	...	...	...
48	Raw tobacco	...	...	1,999	...	30	2,029
49	Manufactured tobacco	...	...	3	...	...	3
50	Opium, &c.	...	...	5	...	5	10
51	Groceries of all kinds	9	...	1,238	...	413	1,660
52	Chemicals, paint, perfumes, drugs, &c.	12	...	2	...	...	14
53	Dies	...	...	74	...	...	74
54	Seeds and plants	64	...	18	...	...	72
55	Live animals	68	...	3,682	3	478	4,231
56	Miscellaneous	219	55	865	...	78	1,217
	Total	38,416	4,754	157,639	1,009	10,581	212,399

Customs Receipts.

	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.
	£	£	£	£	£	£	£	£
Imports	12,580	14,550	21,390	35,330	36,520	41,730	42,860	50,690
Exports	21,580	27,110	23,860	29,160	22,730	26,000	23,180	20,250
Total ..	34,160	41,660	45,250	64,490	59,250	67,730	66,040	70,940

Total Value of Imports and Exports, January 1 to December 31.

	1892.	1893.	1894.	1895.	1896.	1897.	1898.	Hamburg, 1898.
	£	£	£	£	£	£	£	£
Imports	281,700	378,080	351,357	372,964	423,417	413,294	581,013	38,420
Exports	245,900	273,566	239,070	159,686	201,184	225,729	212,399	110,440
Total ..	527,600	651,646	590,427	532,650	624,601	639,023	793,412	148,830

Government scientific experiments.

There is a scientific department in the capital presided over by Regierungsrath Dr. Stuhlmann. It has for its object the organisation of experiments in tree and plant growing. Large gardens have been laid out, and no trouble has been spared to make use of everything growing in the country, as well as imported seeds, &c.

As a result of experiments the following have been found to grow satisfactorily:—

1. Albizzia Lebbek.
2. Acacia Arabica.
3. A. Melanoxylon.
4. Albizzia Molucana.
5. Schisolobium excelsum.
6. Ademanthera pavonia.
7. Calophyllum.
8. Inophyllum.
9. Juga Samau.
10. Poinciania regia.
11. Araucaria excelsa.
12. Tectona grandis.
13. Cæsalpina coriaria.
14. C. Dappan.
15. Phitecolobium dulce.
16. Certonia siliqua.
17. Leucæna Glauba.
18. Poinciania superba.
19. Elacis guincensis.
20. Phœnix silvestris, latania, oreodoxa.
21. Anona Muricata.
22. Spondias dulcis.

Number 16 grows slowly but steadily.

Of a difficult nature to grow are:—

1. Palma.
2. Washingtonia filefera.
3. Eucalyptus.
4. Erythrina; bored by insects in March and April.

The following is a list, some of which are the original produce of the country and some of which are being experimented on. The woods mentioned are all original produce:—

Pulse, Fruits, Corn, &c.	Fruit.	Minerals, &c.	Medical Plants and Poisons.	Oils, Roots, &c.	Dyes and Tanning.	Wood.
Pithecolobiumduelee	Anonacherimolia	Gold, gold dust, gold quartz	Chinchona succirubra	Pipermethysticum	Roulla montagnei	Brugiera gymnorhiza
Voandzeia subterranea	Artocarpus integrifolia	Coal	Rehum officinate	Trigonellafœnumgraccum	Rubia spec.	Heriticra littoralis
Phaseolus radiatus	Banane Musa	Granite	Rumex hymenose palus	Carumbul bocasta	Indigo	Ceriops candolleana
Phaseolus nax	Punica granatum	Melacite	Caphælis Ipecacuanha	Vanilla planifolia	Orlean bixca	Sonneratia caseolaris
Cayanus indicus	Passiflora quadrangularis	Pleonast	Physotigina venenosum	Nigella sativa	Condelana	Rizophora mueronata
Seja Hispida	Spondias dulcis	Turmalin	alœ vulgaris	Cinnamomum ceylanicum	Peganum hermala	Avicennia officinalis
Glicine doja	Duriozibethinus	Magnetic ore	Paparez somniferum	Capsicum spec.	Carthamustinctorius	Trachylobium verrucosum
Virola surina mensis	Sichiumedule	Gneiss	Erytheoxylon coca	Piperingrum	Acacia Perotii, Warb.	Carapa molucana
Hibiscus esculentus	Citrus spec.	Graphite	Cassia angustifolia	Sebiferum	Xantorrhœa arborea	Dichrostachys nusans
Artocarpus incisa	Anona Muricota	Mica	Tamarindus indica	Sapium	Xantorrhœa hastile	Sideroxylon inermum
Dolanum melongena	Musœnsete	Quartzite	Canabis indica	Polygala olei fera	Pterocarpus	Cassia sp.
Cucumis metuliferus	Citrus aurantium	Ironstone	Smilax officinalis	Telfairia pedata	Eucalyptus drapanophylla	Tamarind cus indica
Amaranthus sp.	Mangifera indica	Sandstone	Hedychium spilatum	Monodora myristica	Terminalia bellerica	Dahlbergia melanoxylon
Hibiscus sabdariferns	Anacardium occidentale	Chalk	Piper longum	Butyrospermum Parkii	Termanalia catappa	Ochnaal boserrata
Aroidea*	Syzygium ovariense		Angraccum fragans	Alenristes triloba	Algarobilla	Kigelia thiopica
Trifolium ripens	Hyphæna coriacea		Piper cubeba	Moringa olai ferahypogaca	Cœsalpinacoriaria	Casuariana equistifolia
Medicago satirus	Opuntia sp.		Amaranthus spinosus	Guisotea abessinica	Alpinagalinga	Anacardium occidentale
Trifolium pratense			Myroxylum peruiferum	Zanziber officinale	Valonea	Albizzia sp.
Elensine coracana			Abrus precatorius	Allmbackia Stuhlmanii	Divi-divi	Ficus sp.
Mucuma puriens			Glyciz hiza glabra		Lawsoniainermio	Tetracera sp.
			Tephrosia vogelii		Curcumalonga	Cordia (?)
			Pzatropha Curcas		Acacia pygnantha	
			Croton tiglium		Acacia scurrens	
			Fratozzhiza palmata			
			Ricinus communis			
			Hagenia abyssenica			
			Camphora officinalis			
			Strophantus Emini			
			Strophantus hispidus			
			Strophantus sarmensosus			
			Podophyllum peltatum			
			Pilocarpus pinnali folius			

* Used by natives in times of famine.

NOTE.—To the above belong: Pearl tapioca, flat tapioca, pearl sago, sago, oats, barley, wheat, arrowroot, rice, salt, papaws, cocoanuts, caoutchouc, gum copal; Liberian and Arabian coffee, cocoa, tea, tobacco, mother-of-pearl, &c.

Government schools.

There are four schools; one in Tanga, one in Bagamoyo, another in Dar-es-Salam, and a fourth in Kilwa. In these schools reading, writing, arithmetic, geography, languages, composition, singing, drawing, gymnastics, and German are taught. There are 100 pupils in the school at Tanga, about 70 in the one at Bagamoyo, 65 in the Dar-es-Salam school, and 20 in the Kilwa school. The Swahili element preponderates, after which comes the Indian. As a rule the Swahili and Indian classes are divided, the latter being considered as more easily taught.

The aims of these schools are: (1) the civilising of the Indian and natives, (2) developing of their natural talents, (3) the introduction of the Latin characters in East Africa, (4) training up of Indians and natives as clerks, officials, assistant masters, &c.

The results are very good. A number of young people have now been trained to read and write the Latin characters, whilst a high standard of efficiency has been reached in arithmetic. It is now no uncommon sight to see a little Swahili amusing himself by reading short anecdotes in Swahili with Latin characters. If left alone he would never naturally have learnt to read even in Arabic characters, at any rate not at the age of eight or nine years old.

Cost of living.

The most expensive item in German East Africa is house rent; this is explained by the fact that there are not enough houses for the population. There is practically but one builder in Dar-es-Salam. As a rule a house having five rooms and a kitchen fetches about 120*l.* a year.

Troops.

The military force consists of a staff and 12 companies with a strength on April 1, 1899, of 172 European officers and N.C.O.'s, and 1,702 native N.C.O.'s and privates, and 47 pieces of artillery.

Each of the 12 companies is, as a rule, composed of two or three officers, one medical officer, and three or four N.C.O.'s, all of whom are Europeans, and some 140 natives.

The men of the Protective force wear a frock and trousers of khakee drill, thick lace-up boots, putties (blue), and a biretta-shaped cap. In marching order they carry a knapsack, haversack, flask with a woollen cover and a waistbelt with one rear and two front pouches. In one of these pouches is an antidote against snake-bite.

In addition to the military force there is a police force composed of 21 European officers and N.C.O.'s, and 522 native N.C.O.'s and privates, and 20 pieces of artillery.

Men of the police force wear the same uniform as the military, with the exception that they have an Imperial eagle in brass in the front of the cap and wear a red cross. Many of the men in the interior wear no eagle.

The men of both forces wear side arms, and are armed with the 1871 pattern Mauser rifle.

Tables showing the distribution of the above forces are enclosed herewith.

Company Number.	Garrison.	Officer Commanding Forces.	Majors.	Captains and Officers Commanding Companies.	Senior Lieutenants.	Junior Lieutenants.	Senior Staff Surgeons.	Staff Surgeons.	Senior Surgeons.	Assistant Surgeons.	Paymasters.	Adjutant Paymasters.	Sergeant Artificers and Artificers.	Sargeon-Majors.	Sergeants.	Native Company Officers.	Medical Sergeants.	Medical Native Company Officers.	Clerks.	Senior Armourers.	Junior Armourers.	Coloured. Interpreters.	Coloured. Effendis.	Coloured. Lance-Corporals.	Coloured. Privates.	Total.	Artillery.
1	Mochi	...	...	...	1	...	...	...	1	...	...	1	...	...	...	1	...	1	...	...	...	...	1	8	101	115	1 quick-firing gun, 4·7 cm. 1 ,, ,, 3·7 cm.
	Marangu	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	16	18	
2	Tringa	...	...	1	1	...	...	1	...	...	...	2	...	1	2	1	...	1	...	...	...	...	...	8	153	171	1 Italian mountain gun, 6·7 cm. 1 quick-firing gun, 4·7 cm. 2 machine guns, 8 mm.
3	Lindi	...	...	...	1	1	...	...	1	...	...	...	...	...	1	1	...	1	...	...	...	...	1	9	88	104	2 light field guns 1 machine gun, 8 mm.
4	Kilimatindi	...	...	...	1	...	...	...	...	1	...	...	...	...	1	2	...	...	...	...	...	...	...	5	64	74	1 Italian mountain gun, 6·7 cm. 1 machine gun, 8 mm.
	Mpapua	...	...	1	...	1	...	...	...	1	...	...	...	...	3	2	...	1	...	...	...	...	1	5	75	90	1 quick-firing gun, 4·7 cm.
5	Dar-es-Salam	1	1	1	3	5	1	4	1	...	1	2	3	3	...	5	...	5	3	1	2	1	1	20	291	355	1 machine gun, 8 mm. 4 light field guns 3 boat guns, 8 cm. 4 Italian mountain guns, 6·7 cm. 1 colony gun, 6·7 cm. 6 quick-firing guns, 3·7 cm. 5 revolver guns, 6·7 cm.
6	Ukonongo	...	...	1	...	1	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...	...	1	9	114	131	1 machine gun, 8 mm.
7	Bukoba	...	...	...	1	...	...	1	...	...	...	1	...	...	1	1	...	...	...	...	...	...	...	8	93	106	1 ,, ,,
8	Songea	...	...	1	1	1	...	...	1	...	...	...	...	...	1	3	...	1	...	...	...	...	1	10	115	135	1 ,, ,,
9	Ujiji	...	...	1	1	1	...	...	...	1	...	1	...	2	...	1	2	...	...	...	...	...	...	13	161	187	2 quick-firing guns, 3·7 cm. 1 Maxim gun, calibre 45
10	Tabora	...	...	1	...	1	...	...	...	1	...	1	...	...	1	2	...	1	...	...	...	...	...	9	118	135	1 quick-firing gun, 4·7 cm. 1 mountain gun, 6·5 cm. 1 quick-firing gun, 3·7 cm.
11	Muanza	...	...	1	...	2	...	...	...	1	...	1	...	...	1	3	1	1	...	...	...	...	...	9	134	154	1 ,, ,, ,,
12	Kilossa	...	...	...	1	1	...	1	...	...	...	...	...	...	...	3	1	...	...	...	...	...	...	4	43	54	1 machine gun, 8 mm.
	In reserve for expeditions	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	6	11	
		1	1	8	12	14	1	7	5	5	1	9	3	8	12	26	5	14	3	1	2	1	6	120	1,575	1,840	47
	On leave	...	...	4	3	1	...	1	1	...	...	5	...	5	6	3	2	2	1	...	...	...	...	...	...	34	...
	Total	1	1	12	15	15	1	8	6	5	1	14	3	13	18	29	7	16	4	1	2	1	6	120	1,575	1,874	47

Garrisons.	Sub-Lieutenants.	Staff Senior Surgeon.	Staff Surgeon.	Surgeon-Majors.	Sergeants.	Native Company Officers.	Medical Sergeants.	Medical.	Interpreter.	Effendis.	Lance-Corporals.	—	—	Total.	Artillery.
Tanga	..	..	..	..	1	..	1	..	..	..	6	63	..	71	4 light field guns
Wilhelmsthal ..	..	..	..	1	1	1	..	..	..	..	1	28	..	32	
Pangani	..	..	..	1	..	..	1	..	..	..	3	41	..	46	2 boat guns, 8 cm.
Bagamoyo	..	1	..	1	..	..	..	1	1	1	3	69	..	77	3 light field guns
Dar-es-Salam ..	..	..	..	1	..	..	..	..	..	..	4	58	..	63	4 light field guns 1 revolver gun, 3·7 cm.
Kilwa	..	..	..	1	..	..	..	..	..	..	5	42	..	48	3 light field guns
Dondi	..	..	..	1	..	..	..	..	..	..	..	10	..	11	
Lindi	..	..	..	1	..	..	..	..	..	..	4	44	..	49	
Usambara	..	..	..	..	..	..	..	1	..	..	2	17	..	20	
Langenburg ..	..	..	1	..	..	2	..	1	..	..	4	46	50	104	2 quick-firing guns, 3·7 cm. 1 Maxim gun, calibre 45
Kisaki	1	..	..	..	..	..	..	1	..	..	1	19	..	22	
Total ..	1	1	1	7	2	3	2	4	1	1	33	437	50	543	20

TOTALS.

	Number.
European military officers, N.C.O.'s, &c.	172
„ police „ „	21
Native military „	1,702
„ police officers, N.C.O.'s	522
Total	2,417
Military artillery	47
Police „	20

Expeditions.

The conquest of German East Africa may be said to have been begun on May 8, 1889, by the storming of Bushiri's camp. Bushiri was a semi-Arab who endeavoured to drive the Germans out of the country. There were 11 expeditions, fights, &c., in 1889, of which the following is a summary:—

May 8	Storming of Bushiri's camp
June 6	First capture of Saadani
July 8	Capture of Pangani
September 9 to November 2 ..	Mpapua Expedition
September 13	Fight at Matanga
November 4	„ Ngambo (2)
November 19	„ Yombo (1)
November 5–17	Second capture of Saadani
December 5–8	Capture of Bushiri
December 27	First fight at Mlembule

In 1890 there were seven actions, as follows:—

January 4	Storming of Mlembule
January 28	Fight at Mandera
March 8–9	„ Palamakaa
May 3–5	Capture of Kilwa
May 10	„ Lindi
October 20	Fight at Kisanga
December 21–29	Expedition against Machemba

To these must be added the Emin Pasha Expedition, which lasted from April 1, 1890, to July 16, 1892, and ended in the death of its leader.

The following occurred in 1891:—

February 12–13	Fight at Kiboscho, on Kilimanjaro, against Suina
December 1890, and January 1891	Expedition to Uguru
June 22 to September 17 ..	„ against the Wahehe
August 16S to eptember 12 ..	„ „ Mafiti

In 1892:—

April 1	Fight at Ipuli, near Tabora
June 6	Quikura qua Sika, near Tabora, attacked
June 10	Sultan Meli fought at Mochi, Kilimanjaro
October 6	Fight at Kondoa
November 7–14	Expedition against the Wafiba, near Bukoba
November 22	Capture of Sultan Kigole's chief town in Ugogo
December 8	Fight at Munisagara against the Wahehe
December 14	Fight against Sultan Sike's people at Kasui, near Tabora

In 1893 :—

January	10–12	Capture of Quikuru qua Isike, near Tabora
February	16	Storming of the chief village, Massentas, near Unianqwira
February	18	Fight with the Wagogo, between Kilimatiuda-Uniangwira
March	10	Capture of Quikuru qua Munini Mtwana, near Mdaluru in Ugoga
March	13	Fight with Chief Maruguru, near Maamandu
March	14–21	Expedition to Uruna
May	3	Fight at Quamba
July	12	Fight against Chief Kisanda, in Mabuena, near Gerengere
August	12	Fight against Sultan Meli, in Mochi, on the Kilimanjaro range
August	28	Storming of the chief town of Sultan Senjangaro, in Nondoa
December	3	Fight against the Mafites, on Lake Nserepera
December	14	Capture of the Quikuru of Sultan Kaudi, of Makahama

In 1894 :—

February	25	Fight in the Migassi Valley, near Kwamkora
March	6	Fight at Qua Mfindo
April	1	Capture of Chief Kidulu of Kitara's Boma
June	11	Fight at Mawudja
June	13	,, Ugansi
August	2	,, Kunda
July	30 to August 6 ..	Punitive expedition against the Sultanate of Bulima
September	7	Fight near Kilwa Kiwindji
October	13	,, Konko
October	30	Storming of the Kiurenga fortress in Ululu
November	6	German force defeated by the Wahehe, near Mage

In 1895 :—

July	18	Fight with Sultan Mutatembwa of Kisiba
August	10	Fight at Limueme, in Agalla, against Sultan Tagarella Gomberi, of Usenji
October	.. ..	Expedition against Sultans and Kislervuka of Kyamtura
October	26	Germans surprised by the natives on Gonga Hills
November	.. ..	War against Sultan of Lukonga of E. Ukerewe
November	6	Fight at Kitumbini
November	13	,, Luavva

In 1896 :—

June 2–4..	Fights with the Waruri
July to September	Expeditions against Burungi, Irangi, Ufiomi, Turu
July 12 to December 25..	War against the Wahahe
November 5	Fight near Gross-Aruscha, on the Kilimanjaro range
November 15–16	Punitive expedition against Sultan Luassa, in Uha
November 18–19	Punitive expedition against robbers on the Tabora–Tanganika road
November to December ..	Expedition against, and capture of, Sultan Mtan's town

In 1897 :—

January 13 to February 23..	Wahumba Expedition
June 4–5..	Fights at Kwa Towera
February, 1897 to July, 1898 ..	War against the Wahehe

In 1898 :—

July 15–20 to August 5 ..	Fights against Sultan Katugamoto, of Urambo
September 10–29	Various fights during the Wabimbi Expedition
August 2	Storming of the Kiboroswa Boma, of the Masweli
Oct. 5–10 ; Oct. 30 to Nov. 7 ..	Fights in Ussandani and in Tramba

And in 1899 :—

February	Expeditions to Upogoro to punish various refractory chiefs
April 13–14	Fight with the Watende
June 12	„ Waburungu
June 12	Expedition against the revolted Wamiamparas, in Ssekke
June and July	Expedition against Sultan Machemba, and capture of his town on July 9–10

The most important of the above were :—

The Bushiri Revolt, which lasted for over a year and ended in the defeat and hanging of the semi-Arab by Major von Wissmann.

Meli, the Chief of Mochi, was also an opponent of some importance, inasmuch as he defeated Baron von Bulow's forces. He was, however, with two other chiefs, Kitongati and Fumba, ultimately overthrown by Baron von Schele. Meli now lives quietly about 200 yards from the fort at Mochi.

The Chief Machemba and a Swahili native caused some trouble in 1895. The former having been defeated, submitted, and then

came back to Dar-es-Salam. He, however, was not quite satisfied that he was inferior in strength to the Germans and rebelled again in 1899, and again defeated. Hassan-bin Omari for some time held Lindi in his power, but was defeated and ultimately hanged. Among his papers correspondence was found compromising the Indians. All concerned were fined heavily.

The Uhehe district is one which has given a great deal of trouble. The troubles date back to 1891, in which year Von Zelewski and his forces were completely cut up by the Wahehe tribe. The defeat was not avenged for some time, and the Chief Quawa began to imagine he was able to resist the Germans, until his final defeat in 1897. A heavy price was set on his head, and in order to avoid capture Quawa committed suicide just at the moment when the soldiers broke into his hiding-place.

Population of the several districts.

No figures are available of the population of Tanga district, but according to a census there are about 33,400 dwellings in the whole district, which would mean a population of about 167,000. The population of the town itself probably numbers about 7,500.

Tanga, 1897–98.

There are 691 houses in the inner town, 448 in the outer town, and 411 houses and huts in the Shambas, the total number being 1,550.

The European and native plantations suffered much from drought, to which must be added a visitation of locusts. Upon the top of this came small-pox, and energetic measures were taken to have everybody vaccinated, with a result that 23,000 people underwent the operation. No caravans to or from the interior were allowed to proceed until every one was vaccinated.

Cattle are beginning to increase, but, owing to the great plague of 1893, they are still in small numbers. Many of those which were brought to the coast died without any apparent reason. Dr. Koch, having examined the infected ones, pronounced it to be Texas fever, whilst in other cases the animals were found to be suffering from tsetse fly disease.

In Bonde and Digoland there has been much sickness among the fowls.

The principal exports are coffee, cardammon, and cocoanuts.

Pangani, 1897–98.

There are 760 Indians, 845 Arabs, 10 Goanese, and about 5,600 natives living in Pangani. The total number of houses is as follows:—

	Number.
Stone houses	174
Mud-built houses	91
Native huts..	1,003
Total	1,268

It was found impossible to levy hut taxes as the population suffered greatly from famine. Here, too, locusts made their appearance. An epidemic of small-pox also broke out, but has now ceased.

The principal exports are cocoanuts, copra, sesame, molasses, raw sugar, and ivory.

There was no rinderpest in the district, only isolated cases of Texas fever appearing.

Saadani. The total coloured population of Saadani district numbers about 43,000 people, of whom 261 are Indians, 4 Goanese, and 144 Arabs. The town itself numbers about 1,200 souls.

There is not much cattle raising in the district; about 500 to 600 head come every year out of Unyamwesi, and are either sold or killed for food.

The exports consist of copal, tobacco, ebony, and skins.

Bagamoyo. About 63,700 coloured people live in the Bagamoyo district. Of these 760 are Indians, 64 Muscat Arabs, 320 Hadramaut Arabs, and 206 Baluchis. The population of the town itself comes to about 18,000 souls. The remainder of the population consists of Persians, Soudanese, Somalis, Abyssinians, and Swahilis. There are 450 stone houses, 1,650 mud built, and 1,600 native huts.

The trade of Bagamoyo is mostly in the hands of Europeans, Indians, and Arabs. Of the Indian merchants there are 20 wholesale traders in ivory.

Experiments show that all oil fruits grow well. The export of copra continues to increase very rapidly.

Mangoes, oranges, lemons, guava, citrons, papaws, &c., are plentiful, but only along the coast.

Muscat donkeys realise a high price. A cross between them and Wanyamwesi donkeys produces very good animals.

About 2,000 frasila of ivory were exported from July–June.

Dar-es-Salam. The population of the capital of German East Africa consists of Europeans (288), Indians (880), Muscat Arabs (40), Hadramaut Arabs (300), Americans (9), Goanese (70), and natives (14,000); the total number being about 15,300, an increase of 2,000, as compared with 1896–97.

There are 207 stone houses and 1,325 huts.

Sesame oil, rice, maize, millet, mohogo, sweet potatoes, peas, pumpkins, John apples, bananas, papaws, mangoes, oranges, pine-apples are grown in great quantities, some part of the produce being exported to Zanzibar.

Cattle, sheep and goats, &c., were brought in great numbers from Uhehe, and kept for breeding or food purposes.

A brewery has been opened, and the beer is apparently more sought after than that of the mother-country.

Kilwa. The population of Kilwa district is about 105,050 people. The Arab element in the town has increased, while the contrary is the case with the Indians, who number 444 souls, the Arabs being 664 all told.

Drought also caused great havoc to the Kilwa district, but the locust plague does not seem to have done much harm.

Rice, maize, millet, raw sugar, sesame, copra, &c., are the chief produce. Some enterprising Arabs have invested in machinery for extracting oil from the various plants.

Cattle are reared and fetch a good price.

Lindi. There are about 2,480 coloured people in Lindi, of whom 80 are Indians and 46 Arabs.

Grenadilla is exported in large quantities, and hopes are expressed that other woods will also soon be exported. Raw caoutchouc is much exported, and, in spite of the fact that there is a great quantity of copal in the district, the export was less than the year before. The export of ivory neither increases nor decreases.

Mikindani. The total population of Mikindani is about 11,000 people, of whom 140 are Indians, Beluchis 50, Arabs 130.

No particular cases of sickness among cattle occurred, but in any case the number of cattle is small. The harvest was good, and locusts have not troubled the district.

Mochi interior. It is at present impossible to give a statement of the population not only of Mochi, but also of all other districts in the interior. The population of the villages is an ever-changing one, especially with such tribes as the Massai, who live now in British territory, now in German. For example, in 1897–98 a large number of Wanderobbos came and settled in Laitokitok (north-east of Kilimanjaro). Then, again, large numbers of the Massai have returned from the Ukamba province (British East Africa), to which district they had fled some eight years ago, owing to a great famine being prevalent in their own part of the land.

A third instance may be quoted, showing how the native population fluctuates. A tribe of Massai inhabiting the Serengeti Plain came in 1897–98, and settled between Beru-Berg and the Kilimanjaro farm, Kibogudto. The wanderings are, however confined to the Masai tribes.

Tea and coffee have been grown with good results. The natives grow bananas, of which there are large groves, potatoes, millet, maize, &c. They do not seem to appreciate the efforts of the Europeans, who endeavour to teach them agriculture on European methods.

No sign of sickness appeared among the cattle, except that a good many died of anthrax in the station itself. A great number of pigs died also, but the disease from which they suffered is unknown.

Wilhelmsthal. The most thickly populated parts of Wilhelmsthal are Konda, Tendeja, Myombo, Mangatua, and in Lalonga, Rudewa, Wumi. The rest live scattered about in small villages.

Most of the people gain their livelihood by agriculture. Some are porters, and others again combine agriculture and porterage.

In this district also there has been a great drought. On this calamity followed another. An epidemic of small-pox broke out, and energetic measures were taken to vaccinate the natives. As a result about 1,400 people underwent vaccination. Cattle appear to be on the increase, and it is not of uncommon occurrence to see small lots of 10 to 20 animals.

Much valuable wood has been found, especially a hard kind, which withstands the white ant. Attempts to grow eucalyptus

globula, rostratra, and amygdalina, as also insignis, were fairly successful.

About 120,000 natives inhabit the district of Mpapua; the Massai and some other tribes are not, however, included in the above. Mpapua.

As was the case in most parts of German East Africa, famine, caused by drought, wrought much havoc among the natives.

Salt and limestone are to be found in many parts of the districts. A dark substance, pronounced to be a coal, has also been discovered.

Cattle have been given to responsible chiefs under the condition that for every increase of 10 to 20 animals one shall be given to the Government. The rest and the milk belong to the chief.

Wagogo, Wanyamwesi, and Wakimbu are the chief inhabitants of the Kilimatinde district, the greater number lying in the first-mentioned. According to a census the population amounts to above 50,000 souls, among which are two Arab traders. Kilimatinde.

The principal products are negro corn, muhindi, mohogo, earth nuts, and native potatoes.

Great efforts are made to instil into the minds of the natives a better idea of agriculture. The chiefs are taught it as much as possible, and they in turn are supposed to teach the people under them. The Wagogo seem to be the hardest to manage.

The forests around yield abundant wood, which is an excellent kind for building purposes, the principal trees being miminga, musollo, mkola, and macheina. Successful experiments have been made in growing mangoes, mulberrys, eucalyptus, cocoanut, oil, and date palms.

There is a fair number of cattle in the district. The Wagogo show a special preference for live-stock, and seek to increase their herds by exchanging ivory for cattle.

As in other parts of the colony, cattle are given to friendly chiefs, the conditions being the same as mentioned above.

There has been no sickness among cattle, excepting among young animals. The probable reason is that the scarcity of food and water does not suit them. Live-stock and ivory form the principal articles of export. 3,400 tusks passed through the station in 1897-98.

The population of Tabora consists of about 13,300 people, and that of the whole district amounts to 500,000. Among the population are four Indians, three Beluchis, and 18 Arabs. The hut tax has been brought into operation. Tabora.

The natives plant, under supervision of the Government, mango trees, date palms, cocoanuts, and oil palms, and latterly, mulberries; asparagus and cauliflower were not successful.

The export of cattle in 1896–97 and 1897–98 was 425 and 1,236 head respectively.

The population of Songea consists of Arabs, coast people, Wangoni, Wampoto, Matengo, Wassango, Mbeger people, Wabena. Songea.

Wapogoro, Wadoe, Wagindo, Wanindi, &c., few Wayao, Mapua, and Wamwera.

The chief products are maize, millet, ulesi, rice, native potatoes, mohogo, earth nuts, and sugar-cane; also gum, wax, tobacco, and ivory.

Experiments in the growing of dates, mangoes, and lemons were successful. The same results are expected from European fruit, such as apples, pears, plums, peaches, apricots, walnuts, chestnuts, currants, raspberries, strawberries, &c.

There is not much cattle in Songea, which is explained by the fact that the plague destroyed great numbers in the early '90's. But what stock there is is similar to that in Uhehe. The Ungoni kind are very good as beasts of burden.

Muanza and Bukoba.

In and around the Muanza Station the population is about 17,800. Immigration has only taken place in Bukoba. Bukoba produces mostly rhinoceros horns and ivory, 2,500 lbs. of which were presented to the Government by the various chiefs. A report states that a small herd of elephants is to be found on Ukerewe Island. The island has therefore been declared a game preserve.

Coffee grows wild, the Wahaia stating that they have seen plants which were nearly 4 feet high.

Iringa.

Peace now reigns throughout the district of Iringa, and since the death of Sultan Quawa the people are returning to their villages to settle down quietly. From accounts it would appear that this land is one of great expectations.

Langenburg and Wiedhaven.

A census of the huts has been made in some parts of the district of Langenburg and Wiedhaven. About 3,800 huts were counted in the territory between Songwee and Kiwira, 4,000 huts in the Mbaka district, and 6,000 in the lower Lusiro district.

About 600 people inhabit the peninsula of Ikombe, and there are 750 in Langenburg.

In and around Wiedhaven, including Neu-Helgoland, the population is about 3,000 people.

It is calculated that 50,000 people live in the Konde highlands, 40,000 in the lowlands and Unyka, and 20,000 in Inyamwanga, Wuanda, and Wungu.

There is very good land in the Kondeland highlands for growing coffee.

Cattle are in a favourable state, but appear to suffer from Texas fever.

Tanga.

Trade particulars, &c., 1898–99.

The harbour of Tanga, 73 miles from Zanzibar, has a beach which slopes slowly down and is a sort of inlet into the land, vessels lie half or two-thirds of a mile from the shore. At low tide passengers have to be carried some 50 yards to the landing place. A pier without a crane runs out into the sea, and it is stated that it is to be lengthened so as to allow steamships to moor alongside of it. The harbour is not affected by the monsoon at present. The mail steamships bring little except mails, the rates being 40 to 50 rs. per ton from Europe, less 15 per cent. rebate.

The landing charges are, as regards Europe and Bombay, collected at the port of shipment. For London it is 5 rs. per ton, for Zanzibar the same, and Bombay 24 pice a bag

The mainstay of the town is the German East Africa Company, after which might be mentioned the West Deutsche Handel Plantation Company.

Imports have increased during the famine, and this has even extended to cocoanuts.

Gum copal is exported largely, but mostly after the rains. The same may be said of rubber, of which about 105,000 lbs. a year is stated to be exported. Most of it comes from Bondei and the Wadigo district, but not as far north as Wassein.

Pangani. Vessels have to lie about 3 to 4 miles from the land off Pangani. There is a heavy swell and the sea breaks over the bar, where there is 18 feet at high tide. As it is a somewhat uncertain matter landing cargo, an insertion is always made in the bills of lading to the effect that the Steamship Company reserve to themselves the right to take the cargo back to Zanzibar and re-ship it by dhow.

Pangani is 38 miles south of Tanga.

Saadani. Saadani, 38 miles south of Pangani, is an open roadstead with very few dhows in the port. It is reported that the mail steamships will not call there next year, unless there is cargo in tempting quantity. The mails will then be sent overland.

Bagamoyo. At Bagamoyo there is practically no harbour. Ships lie about two miles off the land, and small craft about 1½ miles off.

Indian dhows take Indians free to Zanzibar, while Swahili dhows do the same for their own people.

Cattle are exported in dhows in fair numbers at 3 rs. and 4 rs. per head, which includes shipping and landing. Copra is also an article carried by them, but of late, owing to the famine and locusts, cocoanuts have decreased in export. Rubber is all bought by the Indians, who export about 70,000 lbs. a year to Zanzibar, the charge being 3 a. a bag, also hides at 4 r. per ton (about 5,000 a year); ivory, at 2 a. per 35 lbs., equals about ¼ per cent. (about 105,000 lbs. a year); gum at 2 a. per 50 lbs.; cloth (about 5,000 bales a year), mostly from Zanzibar, but some from Bombay Large quantities of rice are brought by dhows from Zanzibar, and from various parts large quantities of foodstuffs are brought, as little is grown in the district.

As the monsoon is favourable for dhows the whole year round it is very probable that the monopoly of trade will be in the hands of these dhows. There is hardly any trade except with Zanzibar.

The imports are practically in the hands of the German East Africa Company, whilst the Indians and Arabs monopolise the exports. There is one Greek who has a caravan business which brings down ivory to the coast, where it is sold to the German East Africa Company.

Kilwa. Ships anchor about 1½ miles from the shore off Kilwa, in 4½ fathoms. When the tide is low there is about ½ mile broad of

reef lying high and dry. Almost all the Bombay cargo is consigned to the Indian traders.

Lindi. There is a reef in front of the town of Lindi, which is visible at low tide. Vessels anchor ¼ to ½ mile off.

At the custom-house go-down, where there is accommodation for 2,000 to 3,000 bags. Another go-down is to be built by the end of 1899, which will take in another 4,000 to 5,000 bags. This building will be chiefly for exports. The German East Africa Company will be the builders, retaining half of it for their own use. The Government will take over the whole, including a jetty moving on rails, according to the state of the tide, within the next three to five years.

The German East Africa Company buy and export on order large quantities of negro corn and other grain, which goes mostly to Bombay, Aden, Zanzibar, and the coast. To Suez goes sesame. The bulk of the rubber also passes through their hands, but, as a rule, no gum. Wax is pretty well divided by the European and Indian.

The following are the steamship freights:—

To—	Articles.		Rates of Freight.
			Rupees.
London	Wax and rubber	Per cwt. ..	4
Bombay	Everything in bags	,, ..	1
Suez	Sesame	Per cwt. bag..	2
Aden	.. ..	Per 20 cwt. ..	20
Zanzibar	Shells, ivory	Per cwt. ..	4
	Rubber	,, ..	¼
	Copal and tobacco	,, ..	½
	Sesame	Per bag ..	1
	Negro corn	Per cwt. ..	⅛

The dhows do a good deal of the coast traffic. They bring about 15,000 to 20,000 cocoanuts from Chole alone per year.

There is little or no direct communication with Bombay. Most of the Indians get their cargo from Zanzibar.

The German East Africa Company have about half the export in their own hands. To Dar-es-Salam they chiefly send grain, sesame to Suez, and rubber to Hamburg. The Indians send gum, rubber, and wax to Zanzibar, negro corn to Dar-es-Salam and Bombay.

In a good season about 500 to 1,000 bags of negro corn are exported by steamship monthly during July and October. Dhows take about 1,000 a month.

The export of ivory is not very great.

About 10 cases of tobacco are exported monthly to Zanzibar, each case weighs from 350 to 400 lbs. The best months are March to November.

Since the Government have introduced regulations prohibiting the export of any but clean wax, this article has fallen-off to practically next to nothing.

Dar-es-Salam.

The harbour of Dar-es-Salam, the capital of German East Africa is circular in shape, fairly deep but shallow towards the creek at the top of the harbour where it is spanned by a bridge. Near the powder magazine on the right hand bank it is also shallow, and the fact is indicated by a buoy.

All dhows pay here, and this applies to all the ports, 5 rs. a year for permission to trade; vessels flying the German flag pay 15 rs. a year. There are no steamship dues either here or at any of the other ports.

Government cargo is discharged at a jetty partly built of stone and partly of wood.

There is abundant room for storage in the customs godown. At present there are two leading into each other, but it is stated that a third is to be built for transhipment purposes.

Lindi and Mikindani send 200 to 400 bags of negro corn a month to Dar-es-Salam. Sometimes they even export as much as 1,000 cocoanuts. About 100,000 cocoanuts are imported yearly in nearly equal proportions from Zanzibar, Pangani, and Chole. They are brought in dhows, which charge 2 to 3 rs. per 1,000. As a rule, about 2,000 to 2,500 bags of rice are imported, but this item has since the famine risen to 4,000 and 5,000 bags.

Most piece-goods come from Zanzibar, some also from Bombay. The most important are American sheeting (good quality), Indian cotton sheeting, cheap cotton sheeting, dyed blue and large printed handkerchiefs for wearing.

Messrs. Hansing and Company are the agents of the German East Africa line. They import a large amount of rice, and have the monopoly of the onion trade, as the line refuses to give it to anyone else. About 300 baskets a month are imported.

The following are the usual amounts imported monthly:—100 cases of ghee from Bombay, 400 cases of potatoes from Marseilles, 100 bundles of boxes of soap, and 200 bags of flour.

The chief firms are:—The German East Africa Company; Messrs. Hansing and Company; Steffens and Company; and Müller and Devers. They are said to do a large business in supplying Government wants.

General remarks.

The general idea conveyed to the traveller is that the German Government have thrown their whole heart into the thorough development of their colony in East Africa. No stone has been left unturned, no opportunity missed to make the most of everything to be found in the territory, which undoubtedly possesses many natural and rich resources. The Government lose no time in ascertaining the natural wealth of the country, and no money is spared in making experiments.

The planter and farmer are not behindhand in their endeavours, and are content to spend their money freely in hopes of getting a large return later on. Some have obtained very reasonable results. The British trader does not appear to have thought it worth his while to try his fortune in this the largest of German colonies. The cause is probably not far to seek. He no doubt would not be satisfied to have small results at first, and, therefore,

seeks out some other place. He also expects to have everything his own way. His prospectuses, price lists, inquiries must all be in his mother tongue regardless of the fact that those to whom he sends them are foreigners and perhaps not conversant with the English language.

The largest foreign community is, of course, the Indian. They appear to be in a flourishing state, although complaints are made as regards taxation. This grievance is in reality quite unfounded. Zanzibar and Mombasa, both so close at hand, spoil the Indian and native as regards taxation. They fail to understand the difference which must necessarily prevail here regarding taxation and they cannot discriminate between rates and taxes.

The East Indian traders must bear in mind that though somewhat more heavily taxed than in India, they make more than in India. Moreover, the want of knowledge of the German language and Government system is a great disadvantage to them. They have been too prone to expect the same conditions of life under German rule that they were accustomed to in India and Zanzibar.

IMPORT DUTY.

Number.	Goods.	Duty.	"Transaction Fee."	Total Duty.
			Per cent.	
1	Spirits of all kinds, excepting beer, wine, vermouth, and sparkling wines	5 per cent.	15	20 per cent.
2	Maize, negro corn, lentils, as well as all similar kinds of grain and pulse not elsewhere mentioned and dutiable in the tariff ..	100 lbs. = 30 pice	..	100 lbs. = 30 pice
3	Rice paddy*	„ 30 „	..	„ 30 „
4	„ husked*	„ 40 „	..	„ 40 „
5	Chiroko	„ 80 „	..	„ 80 „
6	Dried and salt fish	5 per cent.	10	15 per cent.
7	All other unenumerated and dutiable goods and articles, with the exception of those mentioned in "A" ..	5 „	5	10 „
8	Goods and articles mentioned in "A"	..	..	..

* Husked and paddy rice mixed is dutiable as husked rice.

NOTE.—Alcoholic perfumes are taxed as spirits.

Export Duty.

No.	Goods.	Duty.	"Transaction Fee."	Total Duty.
			Per cent.	
1	Ivory	15 per cent.	1·5	16·5 per cent.
2	Hippopotamus teeth and wild boar teeth	10 „	1·5	11·5 „
3	Horns of all kinds	10 „	1·5	11·5 „
4	Hides and skins	10 „	1·5	11·5 „
5	Tortoise shell..	10 „	1·5	11·5 „
6	Cowries and other shells ..	5 „	1·5	6·5 „
7	Copal	15 „	1·5	16·5 „
8	Caoutchouc	100 lbs. = 18 rs.	..	100 lbs. = 18 rs.
9	Orchilla	10 per cent.	1·5	11·5 per cent.
10	Cloves	3 „	..	3 „
11	Clove stems	3 „	..	3 „
12	Pepper of all kinds	10 „	1·5	11·5 „
13	Negro tobacco (prepared and packed in negro manner)..	5 „	5	10 „
14	Syrup, molasses, and sugar cane..	3·5 „	1·5	5 „
15	Earth-nuts	3 „	1·5	3·5 „
16	Sesame	100 lbs. = 15 pice	..	100 lbs. = 15 pice
17	Maize, negro corn, lentils, as well as similar kinds of grain pulse not elsewhere mentioned and dutiable in the tariff	„ 15 „	..	„ 15 „
18	Rice, paddy	„ 15 „	..	„ 15 „
19	„ husked	„ 20 „	..	„ 20 „
20	Chiroko	„ 40 „	..	„ 40 „
21	Ebony, grenadilla, sandal-wood, &c.	5 per cent.	5	10 per cent.
22	All other kinds of wood as also beams, boards, thick and thin poles, timber for shipbuilding, firewood ..	5 „	..	..
23	Mats, sacks of vast, and baskets, weaving grass, and palm-leaves..	3·5 „	1·5	5 per cent.
24	Camels .. .. each	5 rs.	..	5 rs.
	Horses . .. .. „	23 „	..	23 „
	Mules and donkeys .. „	20 „	..	20 „
	Asses, Muscat .. „	20 „	..	20 „
	„ half-bred and Waniamwesi .. „	11 „	..	11 „
	Cattle over 2 years old „	20 „	..	20 „
	„ under „ „ „	12 „	..	12 „
	Sheep and goats .. „	4 „	..	4 „
25	Parrots .. .. „	1 „	..	1 „
	Fowls of all kind .. „	16 pice	..	16 pice
26	Fresh meat of all kind ..	10 per cent.	5	15 per cent.
27	All other unenumerated wares and goods of Africa origin, excepting those mentioned in "B" ..	..	1.5	1·5 „
28	Goods and articles mentioned in "B"	..	..	..

Notes.—Wares made from goods Nos. 1–5 are taxed as if they were raw.

A single sack for caoutchouc is taxed 2 per cent., *i.e.*, weight of sack.

A double sack for caoutchouc is taxed 3½ per cent., *i.e.*, weight of sack.

Husked and paddy rice mixed is dutiable as husked rice.

Except when special exceptions have been expressly stipulated for particular cases, the circumstance of the goods being new or old is not taken into consideration in levying the duty.

A.—*List of Articles Exempt from Import Duty.*

1. Wares and goods which are transhipped or taken on shore under customs control in order to repair damages suffered from stress of weather or other sea accidents, provided that the cargo so discharged be re-exported.

2. All wares and goods belonging to or intended for the Imperial Government of German East Africa.

3. All articles of personal outfit of officers and N.C.O.'s of the Protectorate forces and of Government officials.

4. Coal and all articles of equipment for vessels of the flotilla.

5. Agricultural machines and implements with accessories.

All material for road-making, for constructing and running tramways and railways and all means of conveyance with accessories so far as such articles are proved to be intended for the colony.

6. Coins of the German East Africa Company.

7. Used tools and implements of settlers in the colony.

8. Physical, medical instruments as also medicines, printed matter, patterns, statues and pictures with or without frames, except photographic apparatus and accessories, books having pages on which there is space for writing or drawing. Paper prepared for accounts, labels, bills of lading, &c.

9. Household effects, furniture, clothing, linen and wedding presents imported by settlers, if they can prove by an official certificate that they require them for their own use and intend to live in the colony.

10. All articles imported by Christian missions of direct use in the services of the Church, in education or in nursing the sick.

11. Small articles of consumption in travellers' trunks, not exceeding 5 rs., used clothes and linen not for sale.

12. Live animals.

13. Goods exported from German into foreign territory for repairs or alterations and subsequently re-imported, provided they are declared at a principal custom-house for re-importation or at Custom-House No. 1, or re-imported under Class II, and that they be re-imported within nine months from the date of exportation, and that the goods owing to the repairs have received no higher value than they had originally when new.

14. Seeds, plants, trees, &c., intended for cultivation.

Chiroko, rice, negro-corn, maize, &c., are not to be regarded as seeds.

15. Used empty barrels, boxes, sacks, tin, and other packages if they are to be exported with contents.

New packages can be imported free of duty in certain conditions.

16. Gravestones, &c., if not imported for trading purposes.

17. Articles of consumption of all kinds for the use of the Government hospital mess, provided a certificate is produced signed by the chief hospital doctor.

18. Manure and disinfectants, if imported by planters for their own use.

B.—*List of Articles Exempt from Export Duty.*

1. Wares and goods of African origin belonging to the Imperial Government.
2. Cattle for slaughter and all produce of the colony exported by the Imperial Navy for their own use.
3. Clothes and linen.
4. Goods of African origin not exceeding 20 rs. in value taken on board ship by passengers, ship's crew, or pedlars.
5. Ethnographical articles not exported for trading purposes.
6. Useless animals (alive or dead).
7. Sucking camels, horses, asses, calves, lambs, and kids, which follow their dam.
8. Produce of European plantations.
9. Copra.
10. All goods imported from foreign into German territory to be re-exported within nine months, provided guarantee can be given of identity and re-exportation within nine months.

Port regulations. Dar-es-Salam.

Sec. 1. The following regulations concern the Harbour of Dar-es-Salam, which includes the creeks and the entrance to the harbour, from a line from Buoy A–Buoy I to Ras Rougoni.

The Flotilla Department in Dar-es-Salam is entrusted with the enforcement of the police regulations.

Sec. 2. Ships arriving may anchor where most convenient, except in cases where the port authorities or the pilot may decree otherwise. Only in cases of urgency may ships anchor at the entrance to the harbour from Buoy A in a line from Buoy III to the Evangelical Mission.

Sec. 3. Ships arriving or departing must always be prepared to let go the anchor.

Sec. 4. In cases where ships are required to anchor in a particular place, notice is given thereof by a green flag being hoisted in a small boat. They will be required to follow the same, and upon the flag being waved and taken down the anchor must be dropped.

Sec. 5. Ships arriving for the first time receive a copy of the port regulations. Upon calling again no claim can be made to second copy.

Note.—Dhows receive information in regard to port regulations from the custom-house officials.

Sec. 6. Upon ships producing a satisfactory bill of health, permission to land is given by the port officer or pilot. In other cases the port officer may order the quarantine flag to be hoisted. He must then inform the chief of customs and the district office thereof.

Immediately after anchoring, as far as there are no quarantine restrictions, an official of the chief customs department comes on board and examines the ship's papers. This does not take place in the case of vessels of war. Passengers landing with handbags, &c., or anything else liable to pay duty, must only do so at the chief customs landing-stage, in order that their luggage may

be examined. Packages and goods of all kinds may be discharged only at this landing stage.

Special regulations exempt officers and officials, as also members of the Imperial navy, from the above regulations.

Sec. 7. All ships having had infectious diseases or deaths, &c., on board during the voyage, or arriving from infected or suspected ports, must, upon arrival in Dar-es-Salam Harbour, hoist the quarantine flag. The quarantine regulations come into force on such occasions.

Sec. 8. On a death occurring on board a ship within the harbour of Dar-es-Salam a written notice thereof must immediately be given to the district office, which will make the necessary arrangements for the burial, &c.

Sec. 9. Ships having powder, dynamite, petroleum, &c., on board, must first obtain permission to enter the harbour.

Sec. 10. Ships requiring ballast must first obtain permission from the port officer. Ballast may only be taken from a certain indicated place, and the Government reserves to itself the right to make a charge for it.

Sec. 11. Dhows may only load and unload cargo between the Sewa Hajee Hospital and the Roman Catholic Mission.

Sec. 12. Dhows and other small craft must steer clear of vessels entering and leaving the port.

Sec. 13. Pier No. 1 may only be used by the officials of the Government, officers of the troops, and the Imperial Navy. Pier No. 2 may be used by private persons, provided always that they have no dutiable articles with them. Boats manned or unmanned may not be fastened for any length of time to the pier.

Sec. 14. Heavy goods may not be shipped or landed at piers Nos. 1 and 2.

Vessels may only be beached upon receiving permission from the Flotilla Department, and only at the place assigned to them.

Sec. 16. Barges, boats, and such like, belonging to firms and private persons resident in Dar-es-Salam, may only anchor or be beached between the Roman Catholic Mission and the Sewa Hajee Hospital.

Coral, stone, building wood, &c., may be landed, but only after having obtained the permission of the port officer.

Sec. 17. Boats belonging to the Government officials may anchor in front of their private dwellings. Other boats, &c., belonging to officials and the storehouses must anchor in front of the owner's building or be fastened to a buoy.

Sec. 18. Infraction of the above regulations is punishable by a fine of 50 rs. (3*l.* 6*s.*).

The punishment in regard to Europeans is enforced by an order of the court; natives are punished by an order of the chief of the flotilla.

Additional Regulations:—

1. Vessels arriving are signalled from the signalling station by means of two different flags, namely:—

Government ships: Small German flag with the eagle in the centre.

Vessels of war, steamers, sailing ships, &c.: A large German commercial flag.

2. As soon as the large flag is hoisted, no vessels except those of the Government may leave the harbour.

Land regulations, conditions of sale, &c.

In some of the districts Land Commissions are held, composed of the district officer, a missionary or planter, and one or two akidas or jumbes (chiefs). They draw up a protocol deciding as to what is native land, and the remainder is apportioned to the Crown. The Commission has no regular sittings, but meets from time to time as occasions arise.

Crown land is sold by the Imperial Government according to its position, value of the ground, &c.

According to treaty the German East Africa Company are entitled to all waste land in the territory coming under the Imperial Letter of Protection (Useguha, Ungun, Ukami, and Usagara), as also a coast-line reckoned 10 sea miles inland.

Woods and forests regulations, Usambara.

In order to preserve the forests the following regulations have been made:—

Sec. 1. A breadth of 150 metres of forest on the crest of hills must remain untouched. Special permission to the contrary must first be obtained from the Government.

Sec. 2. Wood on cliffs overhanging hills at an angle of 45 to 50 degrees may not be cut.

Sec. 3. Belts of forest 30 metres broad, lying perpendicularly towards the base of a valley, and distant 600 metres one from the other, may not be touched on the slopes of hills.

Sec. 4. Strips of forest 50 metres broad bordering the banks of streams must be left untouched, so that either there are trees on both sides, or on one side only.

Sec. 5. Offences against the above regulations are punishable by a fine not exceeding 6,000 rs., or imprisonment up to 3 months. In cases of negligence a fine not exceeding 1,000 rs. will be imposed.

House and hut taxes (annual).

Houses and huts are divided into two groups, viz., houses and huts in a town, and houses and huts in the country.

Town houses.

Town houses, if built according to European, Indian, or Arab style (stone), a tax of 5 per cent. is levied on the rent. 100 rs. is the highest tax.

Houses and huts built according to native style pay 12 and 6 rs., according as to whether they are placed in the first or second class.

Houses in the country.

Stone houses built according to European, Indian, or Arab style are divided into three classes:—Class I pay 30 rs.; Class II pay 20 rs.; Class III pay 10 rs. Native houses and huts pay 3 rs.

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No. 540 Miscellaneous Series.

DIPLOMATIC AND CONSULAR REPORTS.

GERMANY.

REPORT ON THE

RISE, PROGRESS AND PRESENT CONDITION OF THE CARBIDE AND ACETYLENE INDUSTRIES IN GERMANY.

Presented to both Houses of Parliament by Command of Her Majesty,
NOVEMBER, 1900.

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No. 540. **Miscellaneous Series.**

Report on the Rise, Progress and Present Condition of the Carbide and Acetylene Industries in Germany by Dr. Frederick Rose, Her Majesty's Consul at Stuttgart.

(Received at Foreign Office, October 25, 1900.)

Prefatory remarks.

The following report has been compiled in order to show the progress of scientific industrialism in Germany, and to enable the British acetylene industry to benefit by the experience which has been gained in Germany.

Special attention is directed to the valuable work of the German Acetylene Society, to the attitude of the fire insurance companies and the State authorities, to the lighting of small towns and the adoption of acetylene oil-gas by the German railways.

Finally, it may be remarked that in acetylene gas lighting the ordinary element of rivalry between the same industries in different countries is, to a great extent, absent, as the sphere of action of each is limited to its own country. Any advance, therefore, made by one can only benefit others, and, by the interchange of experience and opinion, lead to the establishment of harmonious relations and mutual advantages.

One of the most remarkable instances of the creation and rapid growth of an entirely new industry has been seen in Germany, during the last four years, in the manufacture of calcium carbide and the progress of acetylene gas lighting.

Calcium carbide, the preparation of which on a large and remunerative scale now forms one of the triumphs of electro-chemistry has long been known to the chemist since its discovery by Friedrich Wöhler, at Göttingen, in 1836, and the subsequent study of its qualities by Berthelot. The interest which it excited, however, was purely scientific and confined to the chemical laboratory, and it was not until the year 1892 when Thomas Wilson in America and Henri Moissan in France, working independently of one another, showed how calcium carbide could be produced in large quantities from limestone and coke in the great heat of the electric furnace, that the industrial possibilities of acetylene gas lighting began to be dimly recognised. Of all the countries which commenced to interest themselves in the new

illuminant Germany was foremost in the field and secured an advantage which she has since easily maintained and considerably increased.

Thanks to chemical and engineering science, acetylene has entered into competition with petroleum, coal-gas, and electricity, and it is at present impossible to predict with any measure of certainty what the ultimate result will be. Probably petroleum will suffer most, coal-gas will be superseded in some respects—especially with regard to the lighting of small towns—and electricity will not be appreciably affected.

Up to July, 1898, 62,000 jets of acetylene were installed in Germany. In the first months of 1899 this number had increased to 170,000 and was at the end of 1899, assuming that the rate of progress had been maintained, about 220,000. Taking the illuminating power of the acetylene flame at 40 normal candle-power, this would give a total of 8,800,000 candles, without taking into consideration the large number of jets of the acetylene oil-gas mixture used so extensively by the German railways. The records of the Imperial Patent Office reveal the extraordinary fertility of invention developed by the acetylene industry. In 1897, 617 patents were applied for; in 1898, 937. No other branch of industry in Germany is capable of showing such a large and steady increase in the number of patents. On the other hand inventions for other illuminants have been gradually decreasing. In 1895, 304 were granted; in 1897, 288; in 1898, 209.

It is difficult at the present moment to give an accurate estimate of the number of acetylene installations in Germany. According to Knappich of Augsburg it probably amounts to about 8,000 including small, medium, and large apparatus and installations, and gasworks for the lighting of small towns. It is used for the lighting of towns, factories, public and private buildings, hospitals, barracks, castles, villas, mills, churches, squares, &c. In many instances it has been adopted by the German State authorities. In Bavaria alone, six railway stations will shortly be lighted by acetylene. The Imperial Post-Office has made a beginning by lighting two of its Berlin branch post-offices by acetylene, and has installed an apparatus with 60 jets in the Berlin head post-office. These latter instances are of some interest because acetylene was in competition with electricity and was given the preference. The adoption of acetylene oil-gas by the German railways will be dealt with in detail further on. The important questions of the construction of generators and the methods of generation have, after a period of experiment and uncertainty, at length resolved themselves into definite proportions. It is almost unanimously agreed that generators must be built of strong and durable materials, and that the method of generation must above all things exclude undue pressure and heating of the gas. For large installations of above 1,000 jets the system of generation, "carbide into water," is almost universally in use. The system of flooding carbide by water still holds its own

in suitably constructed apparatus, especially when some cooling arrangement is provided, but the general trend of scientific opinion in Germany amongst acetylene chemists and engineers is all in favour of dropping the carbide into water. Generators in which the water drips upon the carbide are regarded with great suspicion, and the construction of self-feeding generators is still capable of further improvement. At present there is a distinct aversion to cheap, badly-finished, and unsafe generators, even when offered at low prices and under favourable conditions. Still, however, some few generators are to be seen, crude and inadequate in their conception and absolutely indifferent in their construction to the most elementary principles of safety and stability. The existence of such generators forms a standing menace to the acetylene industry, and has induced the German Acetylene Society to attempt the formulation of regulations for the construction and management of generators. The following questions are under consideration:—

1. The highest permissible limit of temperature in generating chambers.
2. The methods for the determination of the same.
3. Prevention of the escape of acetylene in generating sheds.
4. Quality and strength of materials used for the manufacture of generators, purifiers, and gas-holders.
5. The highest permissible pressure in any section of an acetylene installation.
6. The presence of air in generators, and measures for the total prevention of the same.

The methods for the absorption of the impurities present in acetylene have been studied in Germany with great attention. The methods adopted at first, mostly by inexperienced and ignorant persons, were defective in their action: for instance, wood-shavings moistened with sulphuric acid, in conjunction with a mixture of nitric acid and lime; further a purification similar in use to that for coal-gas, which had naturally no effect upon the principal impurities, the compounds of phosphorus. At present the following methods are extensively used:—Chloride of lime after Linge and Cederkreutz, modified by Wolff, who added salts of chromic acid for the purpose of binding free chlorine; Ulmann's method of a solution of chromic acid in acetic or sulphuric acid; Frank's purifier, consisting of an acid solution of certain metallic salts absorbed by infusorial earth; puratylen, a highly porous substance containing chloride of lime, slaked lime, and calcium chloride; and finally acagin. Although neglected at first, it is a significant fact that at present in Germany the thorough purification of acetylene is considered to be of equal importance to the suitable construction of the generators. The manufacture of steatite burners for acetylene is almost wholly in the hands of two Nürnberg firms, von Schwarz and Stadelmann, who have greatly increased the variety and improved the quality of these important articles. The advent of acetylene necessitated the manufacture of a totally new form of burner.

A new application of calcium carbide has been discovered which may become of great importance in the future. It consists in the production of pure metals from their ores by means of calcium carbide as a reducing agent. The process which permits the great chemical energy inherent in the carbide to be completely utilised is very simple, the ores being mixed with carbide and then subjected to a gentle heat. In this way pure copper and lead can be procured from their respective ores, whilst several alloys can be obtained directly from various ores containing the necessary metals. The economic aspects of the method are favourable, the metal requiring about 2 to 5 cwts. of carbide for its production.

Lampblack is now manufactured from acetylene in Germany. Acetylene gives three to four times as much lampblack as good oil-gas. It is of a deep black colour, with no tinge of brown, and of excellent covering power. It is well adapted for printing purposes, giving a deep black clear impression, and is entirely free from tar compounds. Gases relatively poor in carbon, from which it is desired to obtain lampblack, can be enriched by an addition of acetylene.

The relations between the iron and carbide industries are becoming more intimate since the appearance of an invention which utilises carbide for the production of converted steel as well as for the hardening of armour-plate after Harvey's process. The application of acetylene for driving gas-engines and motor-cars, although at present in its infancy, has probably a great future before it as 160 litres of acetylene give one horse-power, whilst 600 litres of coal-gas are necessary for the same purpose. Compared with benzene motors, it is claimed for acetylene motors that the combustion process is more complete, quicker and odourless.

The invention of Professor Lewes, of Greenwich, who proposes to enrich the poor illuminating capacity of water-gas by the addition of methane and acetylene is likely to become of great importance in Germany as it opens up the possibility of improving the lighting power of gas from inferior coal and water-gas from coke without the complicated apparatus for carburisation which has hitherto been necessary. Lieutenant von Kries has made experiments showing the advantage of the adoption of acetylene for the colonies, and for searching for wounded and dead on battle-fields at night. For this latter purpose a portable generator with searchlight is carried like a knapsack upon the back. For the colonies he sees the great advantage in the lesser weight and consequent reduction in the freight of acetylene compared with coal. One kilo. of carbide gives a flame of 50 candle-power for nine hours, whilst the gas distilled from the same amount of coal burns for only a quarter of an hour with the same light. Acetylene is also used for culinary purposes in Germany, and no complaints have been heard as to excessive cost and unpractical results.

As the temperature of the acetylene Bunsen flame is very high, about 2,700° C. compared with the 1,700° C. of coal-gas, it

is largely used for soldering purposes in factories and workshops.

Several mines are now lighted with acetylene in Germany; in some the workmen are provided with small portable lamps which burn from 8 to 10 hours. It is also extensively used for lighting tunnels whilst boring is proceeding. For photographic purposes and the lighting of picture galleries it has proved to be most useful, as of all artificial illuminants it approaches most nearly to sunlight in its properties.

In Alsace the dyeing and printing factories have adopted it largely, as it allows colours and tints to be as clearly distinguished from one another as in daylight. This resulted in a great saving, as with electric and Auer lighting the loss from defective colouring and tinting was considerable. In some cases the saving effected was so considerable that the cost of the acetylene installation was covered during the first year. The lime-sludge which is formed after the generation of the acetylene from carbide can be considered as the by-product of acetylene gas-lighting; it can be utilised for mortar for building purposes or as manure. Acetylene is, further, often used for searchlights on account of the great facility in transporting the necessary apparatus; the Berlin fire bridgades are at present making experiments in this direction. Investigations carried out on the River Elbe in the presence of several officials of the German Lloyd and the Hamburg Observatory have proved that it is most suitable for lighthouses and signalling at sea; the lights, especially the green, were clearly visible at a distance of 8 miles. The tendency of acetylene to polymerise caused experiments to be made with a view of converting it into benzol and utilising it as a raw material for the manufacture of aniline colours; the price of carbide, however, caused these experiments to be abandoned. Carbide is beginning to be used to destroy the parasites which infest vineyards; for this purpose it is manufactured with a high percentage of phosphorus compounds.

The four principal papers devoted to the interests of the acetylene industry in Germany are:—

"Das Acetylen," official organ of the German Acetylene Society, edited by Professor Dieffenbach, Dr. Scheel, and Dr. Altschul, in Berlin.

"Zeitschrift für Calciumcarbid-Fabrikation und Acetylen-Beleuchtung," edited by Dr. Ludwig, in Berlin.

"Das Acetylen," edited by J. Gerlach and F. Liebetanz, in Düsseldorf.

"Voran," edited by L. Henking, in Cannstatt.

The following list gives the names of some of the principal firms for acetylene lighting with the amount of capital invested:—

Name of Firm.	Amount of Capital Invested.
	£
Allgemeine Carbid- und Acetylen-Gesellschaft, Berlin ..	80,000
Hera-Prometheus, Berlin	60,000
Falbe and Co.	50,000
Butzke and Co.	17,000
Deutsche Acetylen Gesellschaft	23,000
Keller and Knappich, Augsburg	25,000
Bucher and Schrade, Mannheim	12,500
Welkoborski, Giessen	7,500
Thüringen'sche Gesellschaft	15,000

The number of firms exclusively and partly engaged in acetylene gas-lighting, manufacture of carbide, and all other necessary accessories is probably between 200 and 250.

The economical importance of the carbide and acetylene industries in Germany.

The production of coal-gas in Germany amounted to the following figures according to Dr. Frank :—

Year.	Production in Million Cubic Metres.
1859	44
1869	151
1877	324
1885	479
1896	733
1899	900

for which last amount no less than 3,500,000 tons of coal are necessary.

This by no means, however, represents the principal supply of light in Germany, which is afforded by petroleum—

PETROLEUM Imported into Germany.

Year.	Quantity.	Consumption per Head of Population.
	Tons.	Kilos.
1870	70 000	1·87
1875	154,000	..
1880	235,000	..
1885	389,000	..
1890	556,000	..
1895	811,000	..
1896	853,000	16·26
1899	911,000	16·6

The 911,000 tons of petroleum are equal to 1,100,000,000 litres, and as 6 litres of petroleum give the same light as 15 cubic metres

of coal-gas burnt in ordinary burners, the above 1,100,000,000 litres of petroleum correspond to 2,750,000,000 cubic metres of coal-gas, which is no less than three times the amount of coal-gas at present produced in Germany. This fact is of still more importance when it is considered that the consumers of petroleum are as a rule content with less light, as most petroleum lamps only give about eight to 10 candle-power, whilst gas in open burners gives 18 to 24, and the Auer mantle, 50 to 60 candle-power.

As the production of petroleum in Germany is very small, and there are no prospects of an increase, she is entirely dependent upon the foreign import trade for this most important necessary of daily life.

There is scarcely any prospect in Germany of electricity and coal-gas supplying the place of petroleum, but it is extremely probable, especially with the present low carbide prices, that acetylene will be able to compete successfully with petroleum, and thus render Germany at least partly independent of the foreign petroleum import.

The illuminating power of acetylene is 15 times that of coal-gas. As 15 cubic metres of coal-gas give as much light as 6 litres of petroleum, 1 cubic metre of acetylene is equal to 6 litres of petroleum as regards lighting power, and with regard to the price is now even somewhat cheaper than petroleum. What is still necessary is the invention and construction of a comparatively safe house lamp. But even then the substitution of acetylene for petroleum could only take place gradually, and would for many years to come be only partial. A total immediate substitution would require a supply of 600,000 tons of carbide, for which electric plant with about 600,000 horse-power would be necessary. For the present, however, a partial substitution of acetylene for petroleum would not only benefit a home industry, but would also render Germany less liable to the violent and arbitrary fluctuations in the prices of imported American petroleum. For it must be remembered that the acetylene industry is a purely German industry. The carbide is manufactured in Germany, and the large amount imported comes partly from works which have been built with German capital, and are now managed by German engineers and chemists. Further, the generators, purifiers, burners, piping, and all other necessary accessories are solely manufactured in Germany.

Once the substitution of acetylene for petroleum has seriously commenced, there is little doubt that the acetylene industry, in addition to the great progress it has already made, would advance with rapid strides. Although the amount of water power available in Germany for the manufacture of carbide is limited, an immense source of power is being now opened up by the utilisation of the waste gases of blast furnaces, to which detailed reference will be made further on.

As an instance of the manner in which, when the demand is present, a completely new industry, working with new machines, without the advantage of previous experience, is capable of

development in Germany, the sudden rise and progress of the liquid carbonic acid industry may be mentioned.

The production of liquid carbonic acid gas, which is principally used for the preservation and drawing of beer, and is therefore by no means an indispensable article of daily use, was 122,000 kilos. in 1884, 1,000,000 kilos. in 1889, 11,500,000 kilos. in 1898, and 14,000,000 kilos. in 1899. The capital invested in carbonic acid works, and in the steel cylinders necessary for its storage, amounts to 1,250,000*l.*

The above remarks on the competition of acetylene with petroleum, and the foundation of a home industry in the place of millions expended for an imported article, apply in the fullest sense to the United Kingdom. As regards the manufacture of carbide in the United Kingdom, although water-power is scarce, there is a great source of hitherto unused power in the waste gases of blast furnaces.

The manufacture, price, and consumption of calcium carbide in Germany.

Since acetylene gas lighting has now become an established fact in Germany, and its future possibilities recognised, the question of the production of the raw material, calcium carbide, has assumed great importance. At the present time the greater part of the carbide demand is met by importation, as the home production is not even sufficient to meet the requirements of the State railways, with their system of acetylene oil-gas lighting for railway carriages. The Prussian railways alone will consume this year about 5,000 tons, the Bavarian about 600 tons, and the other German States, Würtemberg, Saxony, Baden, Hesse, &c., corresponding amounts, so that the total consumption for railway lighting alone will probably exceed 8,000 tons. When to this is added the amount necessary for the thousands of large and small acetylene installations in Germany, an approximate estimate of the import can be formed. The import comes principally from Switzerland, Austria, Sweden, Italy, and France, and amounted last year to 110,000*l.* The United States, which formerly held a monopoly of the import, has ceased sending carbide, as their production, although large, is scarcely able to keep pace with the progress of acetylene lighting. The statistics for the first quarter of 1900 show that the import of foreign carbide is beginning to decline; it amounted to 1,800 tons.

Compared with such countries as Switzerland, France, and Sweden, Germany possesses much less of the water-power necessary for the production of carbide. The principal water-power still available is to be found in South Germany, in the mountain streams of Bavaria, and amounts to about 150,000 horse-power, taking into consideration only those streams whose power can be utilised with a fair prospect of financial success.

Germany possesses at the present moment the following carbide works:—

	Horse-Power.	Remarks.
Rheinfelden	5,000	Water-power
Lechbruck	2,500	Water-power
Hagen	500	Steam
Phœnix, at Dortmund ..	1,000	Blast-furnace waste gases
Lauffen, in Würtemberg ..	600	Has ceased working for the present

The capital of the companies amounts to about 330,000*l.*, the total horse-power to 9,600. The Ruhr Carbide Works (water-power), with 2,500 horse-power, are in process of erection.

These works ought to produce, theoretically, about 9,000 tons annually, an amount which is easily surpassed by the import. German capital has gone largely abroad for the production of carbide by means of electricity generated by water-power.

The "Allgemeine Carbid- und Acetylengesellschaft" in Berlin has 1,500 horse-power at Sarpsborg (Norway) and 1,500 horse-power at Deutsch-Mattrei (Tyrol); Siemens and Halske, Berlin, possess part of the Carbide Works at Wynau (Switzerland); Schuckert in Nürnberg, possesses part of the Lonza Works (Switzerland) with 7,000 horse-power, Thusis (Switzerland) with 3,500 horse-power, and Jayre (Dalmatia) with 8,000 horse-power.

The principal inducements were, firstly, the low prices of the water-power, and secondly, the facility of its utilisation on account of the great fall which renders the construction of long canals unnecessary. Later on it was found that these advantages were greatly reduced by the cost of the carriage of the necessary coke to the carbide works, and the carriage of the carbide to the consumers. At the present date it may be assumed, for the above reasons, that a carbide works in Germany paying two to three times more for its water-power than one abroad, is more likely to prove a financial success.

It is generally believed that the further successful development of the carbide industry is dependent upon two conditions: favourably situated water or other power and cheap raw materials. However cheaply carbide can be produced, if the cost of carriage to the consumer be too high, it will not be able to find a market. For this reason, therefore, a water-power, however cheap it may be, is not always suitable for the erection of carbide works. It will always be noted that the majority of large acetylene installations are to be found either in the vicinity of carbide works or in places to which the carriage of carbide is not too expensive.

These considerations were mainly instrumental in causing the erection of steam carbide works in Hagen in Westphalia and Zonskowice in Russia, in addition of course to cheap available coal.

For some time past efforts have been made in Germany to utilise the waste gases from blast furnaces for various purposes, and the idea was at once conceived of converting this cheap and important source of power to account in the production of carbide.

Altogether gas engines with about 10,000 horse-power are being at present worked by this hitherto neglected source of power, and in Germany alone an additional 5,000 horse-power will probably soon be utilised for the manufacture of carbide. Thus at Bochum in Westphalia an installation is at present in process of erection which, when completed, will work with several thousand horse-power for the production of calcium carbide and other suitable electro-chemical products. The advance made in this direction is of especial interest and importance for the United Kingdom, as she shares with Germany, although in a much greater degree, the disadvantage of not possessing important water-power. According to Liebetanz of Düsseldorf, the cost of one horse-power varies from 3*l.* to 4*l.* 10*s.* This will probably be reduced in the future by improved methods of securing and conducting the gases, by a more simple system for the purification of the same, and by improvements in the construction of the gas engines.

The machine works at Deutz on the Rhine, alone, have already delivered 15 gas engines for waste gases with a total of 4,100 horse-power, and are constructing 15 more with a total of 9,000 horse-power. Of these no less than four possess a capacity of 1,000 horse-power each.

The present state of the carbide industry is not favourable for the owners and shareholders of carbide works. There seems to be in many cases an over-production of carbide, which has reduced prices to such an extent that some works have been compelled to limit or cease their output.

At the Düsseldorf Congress in September last the representatives of the carbide works held a consultation regarding the formation of a syndicate for the raising of prices. This crisis—which is probably only of a temporary nature—does not affect the acetylene industry, which can only be benefited by a fall in the price of carbide, and may even in course of time be of advantage to the carbide industry by eliminating those works which—whatever the reasons may be—possess no inherent vital strength. Two years ago the spread of acetylene had surpassed the production of carbide, and high prices reigned; now the reverse is the case; the production of carbide is in excess of the capacity of consumption on the part of the present acetylene installations. It is now seen that enough capital has been expended upon the flotation of carbide companies, and that it is time that more capital and attention were devoted to the spread of acetylene lighting.

If all those concerned in the financing and erection of carbide works had only considered that the period of high prices could only be of temporary duration, failures and partial closures of costly works would never have occurred. An advantage in favour of such works is that they can always devote their electric energy to the manufacture of other electro-chemical products. The carbide crisis is by no means of such a gravity as is generally assumed, and it must always be taken into consideration that the carbide industry is only three years old. The foundation for a

normal and remunerative production of carbide is now being slowly formed and has already shown how erroneous the results obtained in experimental works were, and how hopeless are the prospects of certain works which were erected upon the strength of calculations based on these experiments. The present manufacture of carbide on a large scale has conclusively shown what conditions are necessary for its remunerative production, and how little reliance can be placed upon theoretical calculations.

The prices for carbide in 1898 and 1899 and part of 1900 are shown by the following tables; they are given in marks (1 mark equals about 1*s.*) per 1,000 kilos. (1 kilo. equals about 2¼ lbs.), each kilo. yielding about 300 litres acetylene (1 litre equals about 1⅜ pints), and do not include cost of carriage to place of consumption. Where it is not otherwise indicated the prices are for quantities not below one waggon load (about 10 tons), and from Hamburg:—

PRICES of Carbide in 1898.

Month.	Description.	Price.
		Marks.
January ..	Granulated carbide in retail	700 to 1,000
September ..	From Rotterdam or Hamburg	390 400
October ..	From Hamburg or Berlin (including packing)	420 480
December ..	From Hamburg—	
	Beginning	400 500
	Middle	550 600

PRICES of Carbide in 1899.

Month.	Description.	Price.
		Marks.
January* ..	Swiss, from works	450 to 500
	Swedish, from works	450 500
	French, from works	440
	In Hamburg	550
March	From Berlin	530 550
July	From Berlin	380 420
October ..	From Berlin	380 420
	From Hamburg	345
	From Basel	325
December ..	From Berlin	340 380
	From Basel	320

* Great demand.

PRICES of Carbide in 1900.

Month.	Description.	At—	Price.
			Marks
February ..	Per waggon load	Per 100 kilos. ..	31
	Per 1,000 kilos.	„ ..	35
June	Including drums	„ ..	24 to 29
	Per waggon load (including packing, &c.) from Hamburg, Bremen, and Stettin	Per 1,000 kilos.	265
	From Amsterdam and Rotterdam	„	271
July	One firm offered (including drums)..	Per 100 kilos. ..	21

A large amount of the carbide produced in Norway and Sweden goes to Hamburg and thence direct to South America and Australia, as the Norwegian and Swedish harbours do not possess direct transport facilities to these countries.

On explosions and fires caused by acetylene in Germany.

The history of artificial lighting shows that every new illuminant upon its introduction underwent a certain probationary period, during which many accidents occurred, until the experience necessary for its successful use had been obtained. Of the truth of this observation, petroleum, coal-gas, and electricity give striking examples. There is no disputing the fact that at first, a certain number of explosions were caused by acetylene, and that the accounts of the same—often unduly exaggerated —were instrumental in prejudicing the public and insurance companies against the new illuminant. In course of time, however, it was observed that only in a few cases had much damage been effected, and that cases in which loss of life had been caused were rare and comparatively not more numerous than those caused daily by coal-gas, benzene, petroleum, and other illuminants. Explosions from unknown causes, from the use of liquified and compressed acetylene, and those caused by the experiments and manipulations of ignorant and unskilful persons have not been taken into consideration, as they lie outside the scope of the present remarks.

The apparent great simplicity of the generation of acetylene from carbide by means of the simple chemical action of water, caused at the beginning a perfect mania of inventions for generators, lamps, and the various accessories of acetylene lighting; the Imperial Patent Office in Berlin has never before received so many applications for patents in one single class.

A large number of these patented apparatus emanated from utterly inefficient persons, from amateurs, tinsmiths, blacksmiths, &c., their manufacture, installation and management were often carried out by these same incompetent persons, utterly wanting in the necessary scientific knowledge and practical experience. The result was that many explosions occurred, that the public became prejudiced against the new illuminant, and that the police authorities issued most stringent regulations for the instal-

lation and use of acetylene apparatus. During the last two years this state of things has gradually and entirely changed; insecure, unpractical and badly finished apparatus have been gradually eliminated; the proportion of accidents has to a great extent ceased, whilst the police restrictions have been correspondingly relaxed, and the public is showing a daily increasing interest in the new illuminant.

At the present time, if the necessary precautions are observed, there is no greater element of danger in the use of acetylene for lighting and other purposes, than in the use of coal gas or petroleum. The most convincing proof of this assertion is, that the German public and private fire insurance companies, whose interests are most vitally affected by acetylene, have decided, if certain simple precautions are observed, not to exact any additional premium on the rates for insurance of buildings lit by acetylene.

The official organs of the German public fire insurance companies publish, in the June issue of this year, statistics regarding explosions and fires caused by acetylene and other illuminants during the year 1899. In spite of the large number of acetylene installations in Germany, the explosions and fires attributed to acetylene are only six in number and were, with one exception, caused by culpable neglect of the most ordinary precautions, and would have occurred had any other inflammable gas, for instance coal gas or water gas, been used in place of acetylene for lighting purposes. The damage done to property was of a trifling description, except in one case where it amounted to about 225*l.*: the explosion and fire in this case was caused by the thawing of the frozen pipes.

The number of fires caused during the same period by electricity was 85; it is becoming daily more apparent that electricity does not possess the immunity from fire with which it is generally credited. In estimating the value of the above statistics, it must be remembered that they are issued by the public fire insurance companies themselves, and are therefore not open to the suspicion of partiality.

The lighting of small towns and villages by acetylene gasworks.

In those cases where cheap water or other power is available, acetylene has not been able to compete seriously with electricity. In the absence of favourable conditions for the generation of electricity, it has made remarkable progress in Germany, in spite of the competition of coal gas, for the lighting of small towns and villages. The three principal determining factors for the adoption of coal gas or acetylene are at present:—

1. The cost of installation.
2. The quality of the light.
3. The cost of daily production.

With regard to the first there is little doubt that the initial expenditure for the installation of acetylene lighting is much lower than that for coal gas. As far as the writer has been able to ascertain, this consideration has played an important part in the deliberations of the municipal authorities of small towns

concerning the adoption of acetylene. The following reasons for the lower cost of an acetylene installation, compared with a coal gas installation, are generally urged :—

1. The simplicity of the generation of acetylene, action of water upon carbide, compared with the distillation of gas from coal. The production of coal gas requires an extensive plant and several workmen; acetylene is produced from water and carbide in small generators in such a simple manner that a gasworks for a small town can be attended to by one workman.

2. The fewer impurities present in acetylene permit of a more simple method of purification. Comparison of the simple acetylene purifiers with the apparatus necessary for the elimination of the impurities of coal gas.

3. The fact that the hourly consumption of gas from an acetylene gasworks is only about one-fourth of the consumption of coal gas for the same time and number of jets, which enables the condensers, purifiers, and gas-holders to be built of much smaller dimensions. This is a fact of some importance, especially with regard to the gas-holder.

It is well known that in the project of a coal gasworks the estimates for the erection of a gas-holder occupy an important position as on account of the slow production of coal gas, the capacity of the gas-holder must be at least about 70 per cent. of the maximum daily consumption. This is not the case with acetylene, where the gas-holder need only possess a capacity of about 25 to 30 per cent. of the daily maximum consumption, because in case of need acetylene gas can be much more quickly generated.

A brief comparison is here given of the cost of electric, coal gas, acetylene, and petroleum lighting in Germany, with special reference to acetylene and coal gas. The price of carbide at the beginning of the year, about 32 pf. per kilo. for small quantities, has been taken as a basis, although the price for larger quantities was about 28 pf.* Since then the prices of carbide have fallen, so that the present cost of acetylene is actually below the amount given hereunder.

One cubic metre of acetylene requires $3\frac{1}{3}$ kilos. of carbide, adding another $\frac{1}{3}$ kilo. for waste in feeding the generator, &c., and for leakage from piping, increases the total amount of carbide for 1 cubic metre to $3\frac{2}{3}$ kilos., at a cost of 1 mark 17 pf. The expenditure for the gasworks' installation, piping, renewal of purifying material, interest on capital, attendance, wear and tear, &c., amounts to about one-fourth of the total sum expended on carbide, in very rare cases, perhaps, to about one-third. This raises the price of 1 cubic metre acetylene to 1 mark 50 pf.

The following amounts of the different illuminants, according to Prof. Vogel, give the same illuminating effect as 1 cubic metre of acetylene :—

* 1 kilo. = about $2\frac{1}{4}$ lbs.; 2 pfennigs = about $\frac{1}{4}d.$; 1 cubic metre = about $1\frac{1}{4}$ cubic yards; 1 mark = about 1*s.*; 1 litre = about $1\frac{3}{4}$ pints.

	Price.	
	Currency.	Sterling (About).
	M. pf.	*s. d.*
1 cubic metre acetylene	1 50	1 6
6 litres of petroleum at 25 pf. per litre	1 50	1 6
16 cubic metres of coal gas burnt in open burners	2 72	2 9
4 cubic metres coal gas burnt in incandescent mantle	0 68	0 8½
5 200-watt electric light	3 45	3 5½

To the sum of 68 pf. for incandescent coal gas light, about 10 per cent. ought to be added for mantles, glasses, and loss in illuminating power.

The average for the price of coal gas in the above table is taken from the following towns:—

Town.	Price.	Remarks.
	Pf.	
Berlin	16	Average price per cubic metre coal-gas = 17 pf.
Hamburg	18	
Breslau	17·74	
Darmstadt	22	
Düsseldorf	16	

This table indicates that (1) petroleum and acetylene are now about equal in price (the waste and incidental expenses of petroleum are greater, and its tendency is to rise in price, whilst acetylene tends to sink); (2) coal gas in open burner is dearer than acetylene, but incandescent coal gas is cheaper; (3) electric lighting is more than twice as dear as acetylene.

A few remarks are necessary with regard to the second point. Photometric measurements for the comparative determination of the illuminating power of the Welsbach mantle and acetylene are generally carried out in laboratories where the actual conditions are different to those of daily life. The light from the Welsbach mantle is measured horizontally, in daily life the light falls, more or less, in a slanting direction upon the objects to be illumined, and thus loses considerably in candle-power.

The above figures do not lay claim to absolute accuracy, but endeavour to give an impartial idea of the present condition of affairs in the lighting industries.

The following list of the installations, which have been erected, or are in progress of erection in Germany, will show the progress acetylene has made in this direction:—

No.	Name of Firm which has Erected the Works.	Name of Town.	Number of Inhabitants.	Price of Gas per Cubic Metre.
				M. pf.
1	Schilling and Guttzeit, Königsberg	Sensburg	3,562	..
2		Bischofswerder ..	1,148	..
3		Passenheim	1,967	..
4		Johannisburg.. ..	3,000	..
5		Frauenburg	2,458	..
6		Saalfeld	2,517	..
7		Guttstadt	4,504	2 50
8		Ratzebuhr	2,298	..
9		Pr. Friedland.. ..	3,518	..
10		Arys	1,324	..
11	Welkoborski, Giessen ..	Grossenlinden ..	..	2 80
12	Keller and Knappich, Augsburg	Hassfurt a.M. ..	2,500	2 40
13	Allgemeine Acetylen- und Carbid-Gesellschaft, Berlin	Oliva	4,212	..
14		Schönsee .. .	1,536	..
15		Ellerbeck	4,176	..
16		Neunkirch	..	..
17	Hera-Prometheus, Berlin-Leipzig	Strelitz	5,000	1 90
18		Treptow a.d.T. ..	4,363	..
19		Peiskretscham ..	4,500	..
20		Sulzburg i.B... ..	1,111	..
21		Allendorf a.d. W. und Bad Sooden	6,000	..
22		Schlangenbad.. ..	382	..
23		Dürrenburg	..	..
24		Achim..	3,500	..
25	Welkoborski, Giessen ..	Daaden	1,767	2 20
26	Deutsche Acetylengas-Gesellschaft, Berlin	Kirchenditmold ..	..	..
	The following are projected :—			
27	.. ..	Sprendlingen	..	..
28		Grossbeeren	..	..
29		Darnnenberg	..	..
30		Trimmen	..	..

In addition to these gasworks for small towns there are more than 100 installations burning above 500 jets.

In order to give a clear description of the generation and purification of the gas in an acetylene gasworks, and the distribution of the gas to the consumers, the installation at Treptow a.d.T. has been selected from the above list.

The gasworks lie about 300 yards from the railway station, and consist of (1) a dwelling-house for the gas engineer, with office; (2) a building for the generators, purifiers, etc.; (3) a carbide shed with a storage capacity of 40,000 kilos. carbide; (4) two pits for lime sludge; (5) a well for the necessary water.

The works were constructed for a daily production of 200 cubic metres, with an estimated consumption of 2,000 jets of 32 candle-power, burning simultaneously. The material used was strong boiler plate, firmly riveted together. The generators are fed by hand according to the system "carbide to water"; the gas-

holder possesses a total capacity of 50 cubic metres; the tank is of wrought-iron.

The purifying substance is "heratol," Ulmann's system of purification by means of chromic acid, dissolved in sulphuric or acetic acid.

After generation, the gas passes through the condensers into the washer, where the ammonia, and, to a slight extent, the sulphuretted hydrogen are absorbed. The washer also serves, by virtue of its construction, as a safety-valve; if one of the generators is being cleaned or repaired, and the workman omits to close the valve, it is impossible for the gas in the holder to return and escape. The gas now enters the gas-holder, and thence passes through the purifiers. The purifying substance absorbs the sulphur and phosphorus compounds of the gas, which now passes through the dryer, gasmeter, and pressure regulator, and then enters the main pipes. The works are heated by steam in winter, and are lighted by jets, provided with reflectors placed outside the windows.

The pipes were originally laid with a view to a possible total consumption of 2,000 jets, in order to prevent expenditure for extension in the future. The main pipes have a diameter of 2 and 3 inches, and are constructed of wrought-iron. Cast-iron pipes have not given in all cases satisfactory results. It must be remembered that the leakage from acetylene pipes means a much greater loss than the leakage of the same amount of coal gas, and that, therefore, the greatest care must be observed to render the pipes as air-tight as possible. The piping possesses a total length of about 5 miles, and is carried over several bridges encased in sawdust wrapping.

In order to investigate whether the above-mentioned towns were satisfied with the new lighting, the German Acetylene Society issued a circular, asking them to express their opinions in this respect. Many of the towns responded, and although the answers contained many inaccuracies, they were unanimous in affirming their satisfaction. As a rule, the municipal authorities themselves manage the gasworks; in some cases the management has devolved upon private companies. Only one disturbance in the system of lighting was reported. The price for 1 cubic metre of acetylene is 1*s.* 6*d.* to 2*s.* in towns with municipal management, and from 1*s.* 10½*d.* to 2*s.* 6*d.* in towns with private management. In most cases the total system of piping is not yet completely utilised, probably because it was purposely laid down in excess to meet future demands.

The gas is used not only for lighting purposes, but also for cooking and driving gas engines. The Ellerbeck Acetylene Gasworks sell acetylene for engines at 1*s.* 2½*d.* per cubic metre, a great reduction on the price for acetylene for lighting purposes.

As will be seen from the above statistics and details, the almost unamimous verdict passed by gas engineers a few years ago in Germany, with respect to the impossibility and undesirability of acetylene gasworks, has been completely refuted. It is con-

sidered to be a matter for congratulation that such important installations are beyond the power of the untrained inexperienced mechanic, who is still felt to be mainly responsible for so much of the suspicion with which acetylene is yet regarded in many quarters, and can only be carried out by firms of repute with a theoretically and practically-trained staff.

The increase in the production of carbide, and the reduction in price, seem to indicate that acetylene, instead of only being used for the lighting of small towns up to 8,000 inhabitants, may come to be used for the lighting of larger towns. The increased demand for carbide, which would result in this case, will be probably supplied by the utilisation of the waste gases of blast furnaces. The amount of carbide consumed by acetylene works is not very great, it may be liberally computed at about 65 to 70 tons per annum for an installation with 2,000 jets. Assuming that the 30 installations in Germany used this amount annually, which is certainly not the case, this would give a total annual consumption of 2,100 tons for gasworks. Assuming further, according to the present method of carbide manufacture, that 1 horse-power produces 1 ton annually, the total consumption of the 30 gasworks could be provided for by a carbide works of about 2,100 horse-power. This is by no means a large amount, the German railways alone will consume 8,000 tons of carbide this year.

A striking instance of the rapidity with which a system of acetylene lighting can be installed was given by the firm of Keller and Knappich, of Augsburg, on the occasion of the annual meeting of the German Acetylene Society at Düsseldorf last September. The proceedings of the Congress, which lasted three days, were concluded by a grand illumination of the Tonhalle Garden. For this purpose the grounds were fitted up with 800 jets of acetylene, with a total illuminating capacity of 56,000 candle-power. The generators, two in number, were placed in the yard, and supplied with condensers, purifiers, and two gasholders. The coal gas piping, by means of which the grounds are generally lighted, was utilised for the passage of the acetylene, the only necessary alteration being the substitution of acetylene burners for ordinary coal-gas burners. The effect was extremely fine, the total absence of shadow, odour, and flickering being most noticeable. This whole installation was fitted up by the above-mentioned firm, with the assistance of four workmen, in the short space of three days.

The adoption of acetylene oil-gas lighting by the Prussian and other State railways in Germany.

Up to the year 1870 railway carriages in Germany were lit by candles or oil lamps. As this method of lighting was gradually found to be insufficient, and petroleum could not be used on account of the danger of fire, the attention of the authorities was directed to gas lighting. Coal-gas, unfortunately, was found to be unsuitable, as its illuminating power decreases under pressure, and it is only in a compressed state that gas for lighting railway carriages can be carried, as the iron cylinders in which it is contained, would otherwise attain too large dimensions. Experiments were then instituted with oil gas manufactured from gas oil, a by-product of the distillation of lignite coal. The results

proved favourable, especially as it was found that oil gas could endure a pressure of 10 atmospheres without showing any appreciable diminution in lighting power, and could, therefore, be carried in small cylinders. The introduction of oil gas was accordingly decided upon, the wholly necessary installation, a simple one, consisting, in addition to the iron cylinders, of pressure regulators, in order to reduce the pressure of six atmospheres in the cylinders to 1½ inches water-gauge pressure at the burners. This new method of lighting railway carriages was carried out with great speed, especially in Prussia; one firm alone, that of Julius Pintsch in Berlin, had fitted out 6,000 carriages in 1880, 32,000 in 1890, and 89,000 in 1898.

In the meantime, however, the science of illumination had made further progress, especially in the improvement of electric lighting and the invention of Auer's incandescent mantle. The quality of oil gas, on the other hand. had considerably declined owing to a deterioration in the properties of the gas oil; for instance, a jet consuming 27·5 litres (1 litre equal 1¾ pints) and giving originally 7 to 8 normal candle-power, had decreased to 5 normal candle-power. This defect was experienced so keenly that in 1895 several authorities were seriously considering the question of the introduction of electric light. About this time the discovery of the manufacture of calcium carbide on a large scale drew attention to acetylene, especially as it was soon observed that it could be used in carriages with oil gas installations without any further necessary alterations. Even if the estimated expenditure for acetylene had been in excess of that for electric lighting, the important fact that the oil gas installation could be utilised for its introduction would have decided the day in its favour. The Prussian railway authorities commenced experimenting with pure acetylene in 1896, and upon the occasion of the annual meeting of the German Railway Directors' Society exhibited with great success a train lit throughout by acetylene, the only drawback being the formation of soot at the burners, a defect which was easily remedied by the adoption of a suitable new form of burner. A beginning was now decided upon and an acetylene gasworks erected at Berlin, near the oil gasworks. In the autumn of the same year several explosions caused by the compression of acetylene occurred, which caused the railway authorities to pause for a time and institute experiments on the liability to explosion of compressed acetylene. These were carried out at Fürstenwalde and proved that the use of compressed acetylene under the normal conditions of railway traffic, actually contained the elements of danger in addition to the possibility of explosion during the process of compression. Attempts were then made to avoid this danger by mixing acetylene with oil gas, and for this purpose mixtures of from 80 to 25 parts of oil gas, with from 20 to 75 parts of acetylene were selected. It was found that a mixture containing as much as 50 per cent. of acetylene was as little liable to explosion as the ordinary pure oil gas hitherto used. Careful photometric measurements showed further, that the

illuminating power of oil gas was considerably increased by the addition of acetylene, a mixture of 75 parts of oil gas and 25 parts acetylene, giving no less than the threefold illuminating power of 100 parts pure oil gas. This gas mixture permitted further the use of the oil gas burners, which cannot be used for pure acetylene, as they cause the jets to smoke and become choked through the formation of soot. These considerations were instrumental in determining the general adoption of the above-mentioned mixture; should it be found necessary to increase the amount of acetylene to 50 parts this can be effected without any change in the construction of the compressing machinery and gas fittings.

After the first acetylene oil gasworks had been erected near Berlin in September, 1897, the Berlin town and ring railways were supplied with the new system of lighting, and shortly afterwards the local and some long distance lines. In October, 1899, all trains within the Berlin railway district had been fitted up, for which five acetylene oil gasworks were found necessary. The amount of carbide required for this purpose for the Prussian railways amounted to 980 tons for 1898, to 3,000 tons for 1899, and is estimated at 4,500 for 1900. The acetylene oil gas system of lighting has now been in use for two years, and has proved completely satisfactory in every respect. The other German State railways are following suit, so that in 1900 about 8,000 tons of carbide will be consumed in Germany for railway lighting purposes alone. The Bavarian railway authorities are devoting special attention to acetylene lighting, not only for the lighting of railway carriages with the oil gas mixture, but also for the lighting of stations with pure acetylene. A beginning was made with the stations at Hochzoll and Hergatz as an experiment; this proved so satisfactory that it was followed by the introduction of acetylene gas at the stations of Hassfurt and Oberhausen; both these two latter important installations were erected by the firm of Keller and Knappich at Augsburg.

The cost of oil gas, according to Railway Director Bork, compared with pure oil gas and acetylene is shown for the year 1898, shortly after its adoption, by the following figures:—

	Cost per Cubic Metre.
	M. pf.
(*a*) Oil-gas	0 30
(*b*) Acetylene oil-gas	0 54
(*c*) Acetylene	1 80

NOTE.—1 cubic meter = about 1$\frac{1}{3}$ cubic yards; 1 litre = about 1$\frac{3}{4}$ pints 2 pfennigs = about $\frac{1}{4}$*d.*; 1 mark = about 1*s.*

The cost of the gas consumption per jet is:—

	Hourly Consumption of—	Cost.	Normal Candle Power.
	Litres.	Pf.	
(*a*) Oil-gas	27·5	0·825	5
(*b*) Acetylene oil-gas	27·5	1·485	15
(*c*) Acetylene	12	1·560	15

To this must be added expenditure for wear and tear, maintenance, interest on capital, &c., which amounts to about 0·8 pf. per jet and hour, so that the following figures per jet and hour result:—

	Price.	Normal Candle Power.
	Pf.	
(*a*) Oil-gas	1·625	5
(*b*) Acetylene oil-gas	2·285	15
(*c*) Acetylene	2·360	15

The cost for one normal candle-power, with an hourly consumption of 27·5 litres for oil-gas and acetylene oil-gas, and 12 litres for acetylene, is:—

(*a*) Oil-gas .. .. $\frac{1·625}{5} = 0·325$ pf.

(*b*) Acetylene oil-gas .. $\frac{2·285}{15} = 0·152$ pf.

(*c*) Acetylene .. .. $\frac{2·360}{15} = 0·158$ pf.

These figures show that in 1898 per hour and candle-power the new system of lighting with acetylene oil-gas cost only the half of the former oil-gas lighting; further that acetylene oil-gas and acetylene were equal in price. Since that time the carbide prices have sunk considerably, and have correspondingly reduced the cost of acetylene and acetylene oil-gas lighting. 1,000 kilos. of carbide cost 400 marks in January, 1898. In June, 1900, the price for the same amount stood at 270 marks.

The attitude of the fire insurance companies in Germany towards acetylene gas lighting.

At an early stage of the progress of acetylene lighting it became evident that all the advantages accruing from the adoption of acetylene would be rendered illusory were the insurance companies to refuse policies or exact premiums which would practically prove prohibitive. Bearing in view the great economical importance of this question, the Acetylene Society placed itself in communication with the representatives of the German private insurance companies in order to facilitate a solution which would be satisfactory to both parties. After many

meetings had been held, and concessions granted on both sides, a list of conditions was ultimately formulated and accepted by both parties.

Great satisfaction is expressed that a basis has been formed which, on the one hand, places the German acetylene industry on a safe footing, and, on the other hand, secures ample guarantees for the insurance companies. It can scarcely be asserted that the conditions hamper the industry in any respect, as they contain nothing which would entail additional expenditure. With regard to the purification demanded, this must be effected in the interests of a safe and perfect illumination whether an insurance is contemplated or not. The conditions embody the minimum of precautionary measures which the companies are compelled to enact, as they bear the risk, but it is understood that if they are conscientiously observed, the premiums will not be increased unless unforeseen extraordinary circumstances should render such a measure necessary. The private insurance companies do not bind themselves, even if the conditions are rigorously observed, never to raise the premiums; they promise that should an increase ever be demanded, it will be so insignificant as not to exert any appreciable influence upon the acetylene industry.

These negotiations with the private fire insurance companies having been thus satisfactorily terminated, the Society then approached the public fire insurance companies with the object of obtaining similar results. The latter replied that they saw at present no reason to depart from their usual regulations for the granting of insurances to buildings, &c., lit by acetylene; that they demanded as a rule nothing further than the strict observation of the rules laid down by the local police authorities; that they did not, generally speaking, exact any increase in the rate of insurance for acetylene gas lighting.

This answer proves that the public fire insurance companies, although they do not officially accept the regulations agreed upon between the Society and the private companies, have no intention of placing any obstacles in the way of insurances for buildings lit by acetylene. It could scarcely be expected that such changes as have been effected by the adoption of these conditions would make their salutary influence felt at once in all directions, or would prevent some insurance companies from raising difficulties or demanding an increased premium. An important test case has just been decided in Bavaria. The weaving mills at Pfersee adopted acetylene lighting in place of oil-gas, and were thereupon requested by the two companies with whom they were insured, to pay an increase of a ¼ per cent. upon their premium. The matter was referred to the German Acetylene Society, which immediately made representations in the proper quarters, with the result that the demand for the increase of premium was forthwith withdrawn. The broad and liberal standpoint adopted by the insurance companies during the negotiations was most commendable. They asserted that there was no desire to take up an inimical or unfavourable attitude towards acetylene gas lighting; that

every improvement in the methods of lighting represented an advance in culture and in refinement, which benefited not only industries, but also private individuals, of both of which classes the insurance companies considered themselves to be the guardians; that, finally, for this very public reason, less than for any personal aims, the greatest care was called for, even to the extent of precautions, which might appear, at first sight, unnecessary.

With regard to the conditions themselves, they contain the following precautionary measures:—

1. The gas-holder must be provided with a safety-valve.
2. The installation must be provided with a purifying apparatus.
3. Generators and gas-holders must be isolated by walls of non-inflammable materials.
4. Inflammable substances must not be stored in the apparatus chambers, which must be always well ventilated.
5. The preparation, storage, and use of compressed acetylene is not permissible. The expression, compressed, applies to acetylene under a pressure of more than one atmosphere.
6. Further regulations regarding size of piping and storage and isolation of carbide.

The German Acetylene Society and its influence upon the acetylene industry.

In reviewing the progress and the present condition of the acetylene industry in Germany it is impossible to overlook the valuable work done by the German Acetylene Society under the able direction of its President, Prof. Dieffenbach, of the Darmstadt Polytechnic School.

Founded in November, 1898, by the fusion of two smaller societies it was immediately joined by 110 members. The roll of membership at the present time counts 370 members, including almost all the principal acetylene chemists, engineers, directors, and owners of works in Germany, besides many from foreign countries.

A special and most important feature of this association is the existence of sub-committees whose duty it is to discuss matters connected with the various branches of the acetylene industry.

1. The general committee consists of engineers, chemists, manufacturers, one patent agent, one lawyer, one director of an insurance company, and an inspector of buildings.
2. The chemical-physical committee consists exclusively of a small number of chemists and physicists.
3. The technical committee consists principally of engineers and chemists.
4. The commercial committee resembles the general committee in its constitution but contains fewer members.

Members of the society pay an annual subscription of 1*l.*, patrons a minimum of 3*l.*, for which the organ of the society, "Das Acetylen," is delivered free. The principal annual meeting is held each year in a different town, and is always attended by a great number of members, many coming from a long distance some even from abroad. In order to increase the efficiency

of the society it has been decided to form sections in the different German States.

The following vital questions, whose satisfactory solution is of the greatest importance to the acetylene industry, have either been finally settled or are under the consideration of the various committees:—

The construction of generators:—
(*a*) Materials to be used and strength of the same;
(*b*) Methods of generation permissible.

Calcium carbide:—
(*a*) Necessary average quality of the same, method of packing;
(*b*) Normal methods of analysis.

Purification of acetylene:—
(*a*) Construction of purifier;
(*b*) Purifying materials.

Negotiations with the competent authorities on —
(*a*) Carriage of carbide by rail;
(*b*) Carriage of carbide by water;
(*c*) Storage of carbide in large and small quantities.

Negotiations with fire insurance companies.

Official investigation of all explosions asserted to have been caused by acetylene.

Prevention of certain commercial abuses at present prevalent in the carbide trade.

The society has also placed its services at the disposal of all State and local authorities who are in any respect interested in acetylene lighting, and has experienced the gratification of seeing the offer in many cases thankfully accepted.

The pioneers of the German acetylene industry recognised at an early date the great value of annual and other meetings, where engineers, chemists, owners and directors of works assemble together to survey the progress already made, to discuss disputed questions and to decide upon normal regulations for the industry.

The first Congress was held in Berlin in March, 1898, the second in Nürnberg in July, 1898. In October, 1898, a general meeting of the Calcium Carbide and Acetylene Society was held at Frankfurt-on-the-Main; in May, 1899, the International Acetylene Congress, held at Budapest, was attended by a large number of German acetylenists.

The German Acetylene Society held its first annual meeting at Nürnberg in October, 1899, its second annual meeting at Düsseldorf in September, 1900. In addition to these, the sub-committees have been most actively engaged upon the various questions submitted to their consideration, and have held, in the present year alone, no less than 10 meetings. The broad scope of the work effected at such meetings is shown by the following list of the papers read at the Düsseldorf and Nürnberg annua gatherings.

Annual Meeting at Nürnberg in October, 1899 :—

(1) Report on the work performed by the Society and the various sub-committees during the past year.
(2) Lecture on an improved electric furnace for the production of calcium carbide. A new method of obtaining metals and alloys from their ores by means of calcium carbide.
(3) The present condition of the lighting of railway carriages with acetylene oil-gas.
(4) The lighting of railway carriages with pure acetylene.
(5) Normal regulations for the calcium carbide trade.
(6) Measurements of the illuminating power of acetylene.
(7) The manufacture of carbide and the carbide market.
(8) The storage and transport of carbide.
(9) Acetylene for ship lighting.
(10) Report on negotiations with fire insurance companies.
(11) Lecture on transportable acetylene apparatus.
(12) Improvements in the construction of acetylene burners.
(13) Acetylene gasworks for large installations.
(14) Compressed, liquid and dissolved acetylene.
(15) The state of German law regarding acetylene.

Annual Meeting at Düsseldorf, September, 1900 :—

(1) The carbide and acetylene industries.
(2) The legal status of acetylene gasworks.
(3) The results of acetylene gas-lighting for towns and villages.
(4) Progress of pure acetylene lighting for railway carriages.
(5) Systems of piping for the distribution of acetylene.
(6) The utilisation of the waste-gases of blast-furnaces with special reference to the manufacture of carbide.
(7) Cost and prospects of the manufacture of carbide by means of the waste-gases of blast-furnaces.
(8) The influence of high temperature on the production of carbide.
(9) The carbide market and the price of carbide.
(10) The normal methods of the German Acetylene Society for the analysis of commercial carbide.

The Society has been most active in furthering the holding of acetylene exhibitions, which have greatly accelerated the progress of acetylene lighting.

The importance of these periodical industrial reviews have been clearly recognised and their opportunities fully utilised.

The first acetylene exhibition was held at Charlottenburg in March, 1898, and was supported by about 40 German firms in addition to several from Austria-Hungary, Switzerland, France, the United Kingdom, Russia, and Denmark. The exhibits included generators, purifiers, mixed-gas apparatus, burners, acetylene gas-engines, carbide, electrical furnaces, and various machines used in different branches of the industry. The second exhibition held at

Nürnberg in June, 1898, was on a smaller scale. The exhibition at Cannstatt in May, 1899, attracted no less than 110 firms, several from the United Kingdom, France, and Germany being amongst the number. The jury which awarded the gold and silver medals at this exhibition excluded from competition all generators working with a pressure of more than a ½-atmosphere, all generators in which the water drips on the carbide, and, finally, all those which were not shown in action. The German industry was represented at the London Exhibition in June, 1898, by three firms, and at the Budapest Exhibition in May, 1899, by 10 firms. The acetylene section of the Paris Exhibition has been entirely neglected by the German industry owing to various reasons.

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DIPLOMATIC AND CONSULAR REPORTS.

JAPAN.

REPORT ON

AGRICULTURE AND HORSE AND CATTLE BREEDING IN KAGOSHIMA PREFECTURE.

Presented to both Houses of Parliament by Command of Her Majesty,
NOVEMBER, 1900.

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1900.

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Report on Agriculture and Horse and Cattle Breeding in Kagoshima Prefecture by Mr. A. R. Firth, Student Interpreter in Japan.

(Received at Foreign Office, September 19, 1900.)

The Prefecture of Kagoshima, being in the extreme south of Kinshu, lies almost entirely south of latitude 31° north. By reason of its southerly situation and the fact that its shores are washed by the Kuro-Shio, with the exception of a few districts in the interior, its climate is extremely hot in summer and very mild in winter. Tropical productions consequently flourish there to a larger extent than anywhere else in Japan. Occasional frosts in winter render the employment of protective measures for many of the plants necessary then. This is especially so in the case of tobacco. The mean temperature is about 16·7 centigrades.

The area of the Prefecture is 3,556 square miles, and about one-third of it is under cultivation, and, in addition to this, a considerable part is available for grazing purposes, although the grass is of very poor quality.

The district being somewhat hilly, and the water supply scarce, there is a paucity of "ta" (rice-fields). About five-sixths consists of "hata" (upland fields). Land devoted to the cultivation of tea and tobacco comes under the latter category.

Land tax to the amount of 63,000*l.* annually is paid on the land under cultivation.

Of a population of 1,090,000 about 500,000 are entirely dependent on agriculture for a livelihood, and an additional 100,000 are partly so. There are very few large landowners, and about two-thirds of the land is farmed by its owners. Labour in the fields is almost equally divided between the two sexes.

Wages for field labourers vary from 12 to 25 sen per diem for men, and 7 to 15 sen for women, according to age and capability. Food and accommodation are supplied in addition.

There are agricultural societies in each of the 12 urban and rural districts in the Prefecture, and meetings are held regularly. The members number 91,800.

A horse and cattle breeding guild supervises all rearing of stock, and is under Government control.

Tobacco. Of the various productions, by far the most important is tobacco. Kagoshima Prefecture is famed throughout Japan for

the quantity and variety produced; in fact, the bulk of the tobacco consumed in Japan comes from this district. About 20 different species flourish, the best known being "kokubu," which takes its name from the district of Kokubu, a low-lying sandy tract of land in the south of Osumi, which is remarkably suited for its growth. About 15,000 acres are devoted to the cultivation of tobacco, and upwards of 4,000,000 lbs. are produced annually. The total value averages 80,000*l.* annually. Only one or two of the species are suitable for foreign consumption, and the quantity exported is practically negligeable. In some districts where the tobacco seed is sown early it is necessary to protect the beds from frost by a roofing of straw about a yard high until the shoots are big enough to be transplanted. The transplanting is generally done in April, but the necessity for protecting the shoots can be avoided in this district by sowing and transplanting about two months later. Most of the tobacco is picked in August and September.

Sugar. Next in importance to tobacco is the sugar cultivation. In this case also slight frosts in winter render it somewhat difficult, as it cannot be planted until the end of March, the cane which is to be used for planting being buried in dry sand during the winter. About 4,000,000 lbs. of sugar are produced annually, but it is of somewhat inferior quality, as the canes have not sufficient time to mature before harvest, which is generally in September. The cane, too, differs somewhat from those usually cultivated in sugar-producing countries, and is rather hardier.

Tea. Tea is grown in considerable quantities, and there are 17 tea growers' guilds in the Prefecture, the members numbering about 4,000. It is not, however, a very famous tea-growing district, the average annual value being 15,300*l.* Of the various kinds of tea produced, "sencha," the ordinary green tea, is the most important, last year's crop yielding 1,046,340 lbs., while "bancha" (late tea), which is usually the second picking, totals about 420,000 lbs. Much of these is exported. About 11,000 lbs. of a superior kind of tea, called "gyokuro" (pearl tea), and a few hundred lbs. of "Kocha" (Congo) and "Uryocha" (Oolong) are also grown.

Cotton, hemp, and indigo. Cotton and hemp are grown with great success, the former being chiefly for home use, being manufactured into a kind of coarse light cloth, known as "Satsuma gasuri," much used for summer wear. About 330,000 lbs. were grown last year.

Although much of the hemp grown is also for home use, about 13,000*l.* worth was exported last year to other parts of Japan, chiefly Osaka. The total produce last year was 1,500,000 lbs. weight

Indigo is also largely cultivated, and the preparation of dyes forms a considerable item in the industries of the Prefecture. Upwards of 1,600,000 lbs. were produced last year.

Rape-seed. Rape-seed is grown chiefly for the manufacture of rape-seed oil, which was used throughout Japan for lighting purposes a few years ago, and, although being now largely supplanted by petroleum, is still extensively employed. Oil to the average annual value of 18,500*l.*

is manufactured and largely exported. Last year's produce of seed was slightly less than the average, but amounted to 235 000 bushels, from an area of 23,000 acres.

Small quantities of oil are also obtained from "rakkwashe," a species of ground-nut.

Rice. Kagoshima Prefecture is a very poor district for the cultivation of rice, as it does not produce sufficient quantities to support its population, and has to depend considerably on that imported from elsewhere. This is chiefly on account of the small portion of its area available for rice growing by reason of the unsuitability of the hills in the interior for terracing in order to make rice-fields, and the difficulty of securing the necessary water supply. Moreover, the soil is not suited to the production of "uruchi"—non-glutinous rice, which constitutes the staple article of diet.

A considerable amount of "mochi" is grown, but as this is an impossibility as a regular article of food, it does not supplement the deficiency.

"Okabo"— hill rice—which has been introduced of comparatively recent years, is also grown, but the yield per acre is only half the other species. It is, however, well adapted to the country, as it grows in the "hata," *i.e.*, upland field, which cannot be turned into a swamp for the cultivation of ordinary rice. The produce last year was:—

	Produce.	Area.
	Bushels.	Acres.
Mochi (glutinous rice)	2,900,000	146,000
Uruchi (non-glutinous rice) ..	330,500	15,200
Okabo (hill rice)	272,300	32,500

Wheat and barley. About 260,000 bushels of wheat are annually grown in the Prefecture. Three-fifths of this is grown on the upland fields ("hata"), and the rest on the "ta," which are occasionally used for the growth of wheat and barley, not being irrigated on such occasions. The yield per acre from the latter averages 25 per cent. more than the former.

The average annual produce of barley is about the same as wheat, although less land is devoted to its cultivation, the yield per acre both in the case of "ta" and "hata" being considerably heavier. A cereal known as "hadaka mugi" (literally, "naked barley") is grown to a very large extent, and the land devoted to its cultivation exceeds that of wheat and barley together. Last year's statistics for these cereals were:—

	Area.	Produce.
	Acres.	Bushels.
Wheat (komugi)—		
"Ta"	13,416	103,722
"Hata"	24,724	156,248
Barley (omugi)—		
"Ta"	2,387	31,249
"Hata"	24,612	247,123
Hadaka mugi—		
"Ta"	24,615	253,000
"Hata"	171,218	377,125

Buckwheat. Buckwheat is all grown on the hills. Last year's output was upwards of 335,000 bushels.

Pulse. Large quantities of soy beans and "azuki" (no English equivalent; a small bean about the size of an ordinary pea, of which there are several species which differ in colour, being black, red, and white). A small amount of peas and broad beans, as well as a few others of the same class, are grown. The figures for last year were :—

	Area.	Produce.
	Acres.	Bushels.
Soy beans (daizu)	27,833	256,198
Azuki	15,717	65,325
Peas	734	11,425
Broad beans	392	3,526

Potatoes. The "Satsuma imo," a species of sweet potato, derives its name from the province of Satsuma, which forms part of this Prefecture. This potato is said to have been originally brought from the Luchu Islands to this district, and from thence to have spread throughout Japan. Enormous quantities are grown every year, and it forms the principal article of food for the poorer classes. About 120,000 acres are devoted to its cultivation, and last year's produce was about 1,000,000 bushels. The ordinary foreign potato is very little grown, as it does not repay the labour expended on its cultivation.

Fruit. With the exception of oranges, of which there are several varieties, peaches, and "biwas," very little fruit is grown in this district. These, however, flourish exceedingly, more especially in the case of the "daidai," a large bitter orange. About 4,000*l.* worth of fruit is grown annually. The statistics for last year were as follows :—

		Quantity.	Value.
			£
Satsuma mikan..	..	10,600,000	652
Daidai and kunembo	..	2,370,000	498
Mikanrui	Bushels ..	200,000	1,850
Biwa	Lbs.	280,000	415
Peaches	Bushels ..	146,000	570

Very little progress has been made in introducing foreign fruits, as there is no demand for them.

Mulberry. The silk industry being considerable, a large number of mulberry trees are cultivated for the sake of the silkworms.

A great drawback to agriculture in Kagoshima Prefecture is the incomplete methods of communication. At present there are no railways and few good roads. The former defect will be partly remedied when the new railway, which is to run north from Kagoshima, the capital of the Prefecture, and join the Kumamoto line at Yatsushiro, is completed. This will be in working order in two years' time. At present a regular service of small coasting steamers is the only means of communication.

Horse and cattle breeding. Japanese horses being notoriously of very inferior quality, the Government have of recent years taken the matter in hand with the object of improving them for the benefit of the country in general and the army in particular. With this object in view they have legislated in order to bring the matter under their direct control. The present Japanese horse is of Mongolian origin, and its only good quality is its power of endurance. As the horse plays a very insignificant part in agriculture, and is little used as a draught animal in the country, work of this kind being performed by oxen, no attempt is being made to produce an animal which possesses the qualities requisite for this purpose; but the object aimed at is to produce, by means of a cross between various imported breeds, an animal which can be used for light draught work and as a means of locomotion. In addition to this it must be suited to the climatic conditions of the country. Apparently no particular breed of horse yet imported meets all these requirements, and although many experiments in cross-breeding have been tried, no satisfactory result has yet been arrived at.

The principal measures which have been passed to control horse and cattle breeding are the "Stallion Examination Law," which came into force July 1, 1898, and the "Horse and Cow Breeding Guilds Law" of April 1, 1900.

The former provides that no stallion shall be used for stud purposes unless it has been granted a certificate, renewable annually, issued in accordance with a certain standard and method of examination prescribed by the Minister of Commerce and Agriculture. Transgression of this law is punishable with a fine of 20 yen (2*l.*).

The latter provides for the establishment of guilds in various urban and rural districts, the guilds being to a large extent self-

governing bodies, but under certain Governmental restrictions. The Government reserves to itself the right of buying up at market prices any horses or cattle for its own use.

Kagoshima Prefecture is one of the largest and most important horse-breeding districts in Japan but the pasturage there as elsewhere is of very poor quality. The regulations in force there are practically the same as those of the various other guilds throughout Japan. All persons wishing to engage in horse-breeding must form themselves into guilds. These guilds are urban and rural, and are both under the control of a central guild at the town in which the Prefectural Office is, in this case Kagoshima. Each guild has its own offices and articles of association, those at the central guild being elected by representatives of the various branches.

Each guild must hold a sale annually, at which all colts and fillies are to be put up for auction, unless special permission to the contrary has been received from the manager-in-chief.

No stallion or mare may be used for stud purposes unless it has been duly certificated by the guild.

Any person, whether a member or not of a guild, who contravenes this regulation is punishable by fine. The standard is as follows:—

Brood mares. The minimum age of brood mares is three years and proportionate development; minimum height, 4·45 shaku (1 shaku equal 11⅓ inches); they must be of good physique and constitution, and free from any vicious tendency or hereditary disease.

Stallions. The minimum height of stallions, 4·8 shaku, age and physical qualifications as mares (see above). In some cases the minimum height is 4·5 shaku, this being in districts where there is a scarcity.

All animals must be brought up for examination at least once a-year, and also whenever the guild authorities may think fit, and they are always liable to have their certificates cancelled if they fail in any respect to satisfy the examiner.

All sales, transfer, losses by death, or otherwise used for stud purposes, must be reported at the urban or rural guild office, and by the authorities there to the central guild.

Examinations of animals are conducted by the managers of the central and urban or rural guilds conjointly.

No person may engage in horse or cattle-dealing without first obtaining a licence from the district police station; and he must keep a record of all his transactions, which may be examined by the police at any time and the licence cancelled if he is guilty of any unlawful acts in connection with his business.

Sales by auction are under the control of the guilds—regular ones being held at suitable places in the autumn every year, and special ones at irregular intervals to suit the requirements of the locality. Any one may bring a horse to the market on making application in the prescribed form. Buyer and seller must each pay a fee to the authorities of 1 per cent. of the purchase money. As all transfers of stud horses must be registered at the guild

2 per cent. of the purchase money must be paid by the buyer for the registration of the transfer. In case of a non-member the same holds good if he wishes to have an animal removed from the register.

All receipts (transfer fees, &c.) are divided as follows:—

	Per Cent.
Central guild	60
Rural or urban guild	20

After paying expenses a certain sum, to be determined by the Committee, may be reserved every year in order to be devoted to the purchase of more stallions to meet any increasing demand.

Subsidies are sometimes granted from the local taxes for the purchase of a stallion by not less than five members of a guild. It varies in value from one-half to one-third the purchase money. The stallion must be minimum height, 4 shaku 8 sun (55 inches), sound, of good pedigree, and of not less than 50*l.* in value. Unless there are more than 120 mares not more than one stallion will be subsidised for any one guild. A feeding subsidy of 3 yen (6*s.*) per month is also granted for two-year-olds to be used as above on reaching age prescribed.

Notices are published in December, and urban and rural guilds wishing a stallion to be sent for covering purposes must at once make application. The central guild then sends an official to examine the mares, and he gives those considered suitable a permit. Provision must be made by the rural and urban guilds in the way of stallions, &c., for all mares sent to the centre to be covered. The stallion is sent from the central guild with an attendant, at their own expense. All expenses incurred by the mares must be borne by the urban and rural guilds, as well as half the keep of the attendant and the stallion while in the district (usually 17 yen and 10 yen, *i.e.*, 1*l.* 4*s.* and 1*l.*). No stallion of less than five years may cover more than two mares in a day, and no older ones more than three. Regulations for the employment and treatment of mares after being covered must be strictly observed.

At the present time there are in Kagoshima Ken 522 stallions qualified under the regulations of 1900, and 218 which, having been previously certificated, are still allowed to cover mares.

Horse shows are held at regular intervals at Kagoshima.

Live-stock.

The following (1) is a table showing the number of live-stock in Kagoshima Ken at the end of the year 1899, exclusive of those bred during the year; (2) is a table showing the number bred during the year:—

TABLE 1.

Species.	Male.	Female.
Horses	80,896	35,761
Cattle	43,323	29,233
Pigs	37,452	29,372
Sheep	189	140
Goats	3,100	2,254

TABLE 2.

Species.	Male.	Female.
Horses	6,729	6,138
Cattle	4,682	3,934
Pigs	8,930	8,443
Sheep	21	16
Goats	672	578

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REPORT ON THE

FEDERAL DISTRICT OF MEXICO.

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Report on the Federal District of Mexico.

By Mr. Acting-Consul Biorklund.

(Received at Foreign Office, October 25, 1899.)

Introductory.

As a phrase used in the Annual Report on the trade of Mexico for the year 1898, in regard to the fact that there was no British commercial house in the City of Mexico, may have appeared as a very exaggerated statement, the following Report on the Federal District of Mexico, in which the City of Mexico is situated, will serve to demonstrate that such is in reality the case.

The figures contained in the following Report have been obtained from official publications, and a great deal of information has been courteously supplied by persons of standing in the country. The remarks about the temperature have been obtained from the National Observatory of Mexico, while those concerning the public health and mortality have been submitted to the approval of the President of the Board of Health.

In places where weights or measures have been given they have been converted to those in use in the United Kingdom.

Valley of Mexico.

Position.

To persons unacquainted with the physical geography of Mexico it may appear that as a great portion of the Republic is situated within the tropics, the figures as regards temperature contained in the following report are incorrect. Such, however, is not the case, as it must be remembered that in mountainous regions the altitude has a great effect on the temperature and climatic changes of the surrounding country.

From the sea coast on both sides the country rises gradually in ridges towards the higher tablelands, and mountains are more numerous as the central plateau is reached.

This plateau, known as the Valley of Mexico (with the exception of the Valley of Toluca, 8,750 feet), is the highest in the Republic of Mexico, and is, according to the barometrical markings of the Mexican Observatory, situated at an altitude of 7,350 feet above sea-level.

It extends 71 miles from north to south, and 38¾ miles from east to west, and covers an area of 811 square miles at the base,

and 1,758 square miles at the summit of the mountains that encircle it.

On the eastern side of the valley, and at the foot of the snow-clad giants Ixtaccihuatl (16,072 feet) and Popocatepetl (17,794 feet), are a series of lakes which serve a two-fold purpose.

The most southerly of these are of fresh water possessing innumerable springs that serve as a natural reservoir from which water can be obtained either for drinking purposes for the villages on their shores, or for flushing the main sewers of the city, the contents of which are then carried by means of the canal which passes through the Lake of Texcoco to the tunnel made for that purpose in connection with the general drainage of the Valley and City of Mexico.

Lake Texcoco, which lies to the north-east of the city, is unlike the southern lakes of Chalco and Xochimilco. Its waters are brackish and form a heavy deposit of natural nitrate of soda, mixed with potash and other salts, which is used in large quantities by chemical factories in the preparation of caustic soda.

On the shores of this same lake there are thermal springs with an average temperature of 112° Fahrenheit (44·5° Centigrade). The late Mr. Romero Rubio constructed an hotel at this place with all modern improvements for the use of persons wishing to take a course of baths. According to the analysis made by the present President of the Board of Health the water contains the following gases:—

Nitrogen 68 per cent., oxygen 4 per cent., carbonic acid 24 per cent., besides chloride and bi-carbonate of sodium, bi-carbonate of magnesia, bi-carbonate of calcium, and potash, silica, and other salts and acids in smaller quantities.

To the north of Texcoco there are three other lakes: San Cristobal, Xaltocan, and Zumpango, all of which are fresh water.

As the City of Mexico is situated in this valley, the various railway companies which make it their starting point have had to study the easiest outlet for their lines. The following list of the various lines, with their direction out of the valley and the height to which they have had to rise to cross these mountains, will demonstrate more clearly the difficulties they have had to encounter.

The railways at the present time having their starting point in this city are:—

Name.		Feet.
Mexican (Vera Cruz) Railway	N.	8,000
Hidalgo Railway	N.	8,(00
Inter-oceanic Railway (northern branch)	N.E.	7,600
Inter-oceanic Railway (southern „)	S.E.	8,000
Mexican Central Railway	N.	7,400
Mexican National Railway	S.W.	10,000
Cuernavaca and Pacific Railway.. ..	S.	9,900

Federal District.

Position. In the southernmost part of this valley is situated the Federal District of Mexico, which corresponds to the County of London, and the District of Columbia in the United States, and forms a separate political division of the Republic of Mexico.

The federal district is surrounded by lands belonging to the State of Mexico, but it is entirely apart from it in every respect.

It is the chief district of the Republic and is also the largest commercial and distributing centre of the country, besides being the residence of the chief executive, judiciary and legislative authorities, as well as the principal seat of education. The chief ecclesiastical authorities of the country likewise reside here.

Political divisions. The federal district comprises an area of 424 square miles, and is divided into the municipality of the City of Mexico and the smaller suburban municipalities (prefecturas) of Tlalpam, Tacubaya, Xochimilco and Guadalupe.

Tlalpam is situated about 11 miles south of the city, and is the favourite resort of the wealthy Mexican families, many of whom own large houses surrounded by gardens and orchards, and who live there during the greater part of the year. This suburb is yearly coming into more favour and persons are buying land in the new colony which is now being started on the northern outskirts of the town and just at the foot of the mountains. The district of Tlalpam also embraces the municipalities of Coyoacan, San Angel, Ixtapalapa, and Ixtacalco. Coyoacan and San Angel are also summer resorts, while Ixtapalapa and Ixtacalco are inhabited almost entirely by the native population who devote themselves principally to the cultivation of vegetables and flowers.

The suburb of Tacubaya, which was at one time in the open fields at the south-western side of the valley, is now almost a part of the city. There are many large houses in the town belonging to wealthy Mexican families, having fine gardens attached to them. At one time these houses were only occupied during the summer months but now they are inhabited all the year round.

Tacubaya includes the municipalities of Tacuba, Mixcoac, Santa Fé, and Cuajimalpa. Mixcoac is a favourite summer resort owing to the many large gardens there, but the others are still little more than villages.

The third division is Xochimilco, situated on the shores of the lake of the same name, and lies on the south-eastern side of the valley and about six miles from Tlalpam. This is the most picturesque of the suburbs, but on account of its being more difficult of access very few foreigners are residents of the town.

The municipality of Xochimilco comprises the villages of Hastahuacan, Tlaltenco, Tlahuac, Tulyehualco, Mixquic, Milpa Alta, San Pedro Actocpan and San Pablo Ostotopec situated on or near the shores of the lake.

The fourth division of the federal district, which also includes Atzcapotzalco, is Guadalupe Hidalgo. This is situated some eight or nine miles to the north of the city and comprises all lands from the north-east to the north-west of the district. Although families live here throughout the year, on account of the lands being so low it cannot be considered as picturesque as the other three districts. The principal attraction of the town of Guadalupe Hidalgo is the venerated shrine of "Nuestra Señora de Guadalupe," which thousands of pilgrims from all parts of the Republic visit each year.

Temperature. The temperature of the City of Mexico as rendered by the manager of the Meteorological Observatory can be taken to represent that of the whole of the plain forming the Valley of Mexico.

This Observatory, which is furnished with many of the most modern instruments, is very ably managed by its director and assistants who are in charge of its different sections, and steady and careful observations are made by them during the day and night. The altitude as indicated by the barometer is 7,472·25 feet above sea-level.

The following table shows the variations of temperature during the past four years:—

	Degrees Fahrenheit.			
	1895.	1896.	1897.	1898.
Maximum shade	84·92	89·24	85·64	84·20
Minimum „	32·90	34·70	35·60	28·40
Mean shade	60·26	60·98	61·34	59·72
Maximum exposed .. .	98·60	98·96	95·18	93·20
Minimum „	22·64	23·00	24·80	22·28
Mean exposed	60·80	61·52	61·88	60·44
Variations in 24 hours—				
Shade	34·74	37·80	35·28	35·10
Exposed	63·00	54·36	52·92	54·72
	Inches.	Inches.	Inches.	Inches.
Mean barometrical pressure ..	23·071	23·079	23·079	23·060

From the foregoing it will be seen that the average temperatures of the City of Mexico for the past four years have been 60·57 degrees in the shade and 61·16 in the open, so that the mean temperature of the past year was about three-quarters of a degree less than the average.

As a complement to the above table the following showing the rainfall and prevailing winds in the same year may be of service:—

	1895.	1896.	1897.	1898.
	Inches.	Inches.	Inches.	Inches.
Total rainfall	16·69	17·80	25·68	23·38
Greatest fall in 24 hours ..	1·26	1·18	1·88	1·24
Prevailing winds..	N.	N.W.	N.W.	N.W.

The temperature is very equable all the year round, but the most pleasant months are from July to December, during and just after the rainy season. January is the coldest month, and from then to May, which is the warmest, the temperature rises until the rains set in steadily. The mornings during the rainy season are perhaps the most agreeable temperature that one can desire, but from 4 o'clock in the afternoon rain storms, which are sometimes very tempestuous, are of daily occurrence.

Public health.

After a careful study of the foregoing one would expect the public health to be fairly good, but unfortunately this is not so, as will be seen from the comparative table of mortality further on.

There are three principal factors that seriously affect the public health, namely :—

First: the conditions under which the poorer classes live.

Second: the entire want of confidence by that same class in the medical faculty.

Third: the defective drainage of the city.

The conditions under which the poorer classes exist are such that they can scarcely be said to live. Their homes consist in many cases of but one room with no other flooring but the ground, which in the rainy season is naturally very damp and consequently not healthy. Their beds are straw mats strewn on the ground. Their clothing consists wholly and solely of cotton shirts and drawers for the men, while that of the women is composed of a piece of unbleached cotton or a piece of woollen material wound around them.

These people, sometimes earning a precarious living, and at others having to depend upon the generosity of those around them for food, are naturally exposed to the ravages of disease, and were it not for the mild temperature the mortality amongst them would be enormous.

Their want of confidence in the medical faculty is readily understood. Living as they do, sometimes without the necessaries of life, they are unable to pay the doctor's fees, and consequently apply to women who are conversant with the virtues of certain herbs, and are recommended by them to try decoctions, which, although not doing actual harm, are not always sufficiently strong and active to counteract the ravages of the disease. This being the case the sufferer either recovers without further help, or else succumbs to the illness.

The Government, through the Board of Health, has now under-

taken to look into this matter, and by means of health inspectors, nominated in the different wards of the city, is able to keep a record of all these tenement houses, in which as many as 30 or 40 families reside, and if they do not afford sufficient guarantee for the public health steps are taken at once, and the owners of these buildings are called upon to improve or rebuild them.

The third of the drawbacks to the public health of the city is the defective drainage.

As far back as 1889 the Government realised this and negotiated a loan with the Trustees and Securities Insurance Company of London for 2,400,000*l.*, the proceeds of which were to be devoted to three very urgent works, namely, the drainage of the valley, the sewerage of the city, and the introduction of the water supply into the city.

The first of these is now concluded; the water supply has also been completed, which, though a great boon to the inhabitants, is still open to improvement. The sewerage of the city is now being undertaken by a French firm of engineers, but judging from what has been done it will be two years before the complete system is ready for use, and until then the public health will not be benefited, for the gases that have been gathering in the subsoil now find escape in the opening up of the streets for the purpose of laying the drainage, sewerage, and flushing pipes.

Population. According to the last census taken in 1895 the population of the federal district, which shows an increase of only 30,000 over that taken in 1889, was 473,820, divided among the several municipalities in the following manner:—

Municipality of—	Number.	
	1889.	1895.
Mexico	329,535	330,698
Tacubaya	23,550	32,053
Tlalpam	35,381	46,368
Guadalupe	13,355	15,830
Xochimilco	41,360	48,871
Total	443,181	473,820

Presuming that the increase from 1889 to 1895, or say 5,000 per year, can be applied to the remaining three years, the population would now therefore be nearly 490,000 (488,820), the more so as a great many births, especially among the poorer classes, are not registered.

At the time when the census was taken in 1895 many of the male population were not entered on account of the fear then and still prevalent among the working and poorer classes, that this was only done with the object of ascertaining how many men there were who could be called upon or forced to serve in the army.

This lack of registration was very fully exemplified during the last two years, when a law was issued by the Governor of the district, obliging parents to register their children, in order to establish their legitimate rights, the result being that those registered in 1898 were far ahead of those in 1897, as will be seen from the following figures :—

	Number.	
	1897.	1898.
Municipality of Mexico ..	2,755	23,120
Suburban municipalities ..	1,863	27,773
Total	4,618	50,893

Showing an increase of over 46,000. Many of those registered were of ages ranging up to 15 or 16.

Another circumstance must also be taken into consideration in calculating the population of the federal district. Since 1895 the influx of the foreign element, especially American, is very noticeable, and this of itself has served to increase the number of permanent residents within its limits.

Owing to this neglect of registering births it is impossible to obtain a correct return of the population. The registration of deaths is accurate inasmuch as no burial can take place without the necessary license from the Government.

Mortality.

The following table, which represents the deaths in the Federal District of Mexico for the past four years, has been compiled from figures supplied by the Civil Registry Office in this city, and comprises the five political divisions :—

Municipalities.	Number of Deaths.			
	1895.	1896.	1897.	1898.
Mexico	14,538	15,567	16,609	18,020
Tacubaya	1,491	1,532	1,841	1,877
Tlalpam	1,875	2,015	2,065	2,292
Xochimilco	1,827	2,044	1,717	1,699
Guadalupe	836	806	937	915
Total	20,567	21,964	23,169	24,803

The increase in the foreign population of the federal district is at present unknown, but there is no doubt that the number of American residents in the city can be estimated at about 7,000, while the British subjects including Canadians do not reach 1,000. Most of the latter are working men employed in the railways and industrial companies in and around the city.

The next census of the City and Republic of Mexico will be taken in 1900, and there is no doubt that the result will be very different to that of 1895, as then it will be ascertained to what extent the foreign element may have increased throughout the country.

The foregoing figures of the mortality of the federal district do not include the number of stillborn infants, which were 1,531 in 1896, 1,560 in 1897, and 1,664 in 1898.

The diseases which are most common in the district are those of the respiratory organs, for the months from November to April, and of the digestive organs from May to July. The months from July to December are those when the mortality is least.

The respiratory organs are no doubt affected by the keen penetrating winds prevailing during the winter months, and produce bronchitis and pulmonary diseases, which taking the form of pneumonia and pleuro-pneumonia are often fatal.

The various forms of enteritis and similar diseases of the digestive organs, which occur in the months from May to July, are due to the quantities of unripe fruit eaten by the poorer classes during those months.

Typhus fever, though endemic in the district, sometimes takes an epidemic form, but cases of typhoid fever are very rare.

Tuberculosis in its various forms is also very general in the City of Mexico.

The following figures, taken from the returns published by the Civil Registry of the Federal District, and by the Board of Health, show the number of deaths attributable to diarrhœa and enteritis (including gastro-enteritis), typhus fever, and tuberculosis in the City of Mexico during the past four years:—

Year.	Number of Deaths.		
	Diarrhœa and Enteritis.	Typhus Fever.	Tuberculosis.
1895	3,632	381	1,338
1896	4,264	480	1,518
1897	5,532	794	1,569
1898	4,921	531	1,531

The President of the Board of Health, who has made a careful study of tuberculosis, has issued a very able report on the malady, showing its prevalence in this city, and remarking that owing to certain conditions it will always be prevalent in the City of Mexico.

In view of the fatal results that often occur amongst foreigners from small-pox, the Board of Health has issued a circular strongly

advising them to be vaccinated before leaving their homes, or else to have it done upon their arrival in Mexico.

Administration.

The government of the federal district is entrusted to a Governor, residing in the City of Mexico, who is appointed by the President of the Republic, assisted by the four prefects of the districts into which it is divided, who are also named by the President on the recommendation of the Governor.

The Governor is also the Honorary President of the Municipal Council, composed of 20 members who are elected yearly, and has a power of veto in certain cases. He also has the right to issue laws and regulations for the city.

The laws issued by the Federal Government which affect the federal district, are also applicable to the territories of Lower California and Tepic, whose governors, unlike those of the States of the Republic, are obliged to report direct to, and are dependent upon, the Home Government. Their revenues are also controlled by the budget of the Republic.

Currency.

In dealing with Mexico and Mexican statistics, it is to a certain degree unfair to the country for two very important reasons to reduce the currency to sterling. The first is, that in sterling the amount is about equal each year, and does not show the sacrifice the country has had to make to cover its foreign debt, which is payable in gold. Secondly, the currency of the country is silver, its revenue is received and its expenditure is calculated on a silver basis, but of late years, when there has been so much depreciation of that metal, it has been quite impossible to estimate beforehand the amount of her foreign obligations. It is noteworthy that with all this she has covered her obligations on her foreign debt, and the municipality has followed suit, and has so far been able also to uphold her credit to the disadvantage of her home interests.

In order to explain this in a more palpable manner it is as well to bring it before the public in such a way that there can be no doubt as to the sacrifices made to cover these obligations.

Revenue.

The revenue of the federal district was until quite recently dependent on the income of the federal treasury from commerce, and to show this more clearly it is necessary to explain the character of these receipts:—

1. The "*Consumo*" *Duty*—a tax of 5 per cent. on all foreign goods imported into the federal district. 80 per cent. of the proceeds of this tax were set aside for the treasury of the Federal Government, and the remaining 20 per cent. were received by the treasury of the municipality, in which the customs department, through which they were introduced, was situated.

2. The "*Portazgo*" *Duty*—a tax levied on all goods of national production introduced into the federal district. 60 per cent. of this tax was accounted for in the revenue of the Federal Government, and the balance of 40 per cent. was assigned to each of the municipal treasuries where the goods were received.

3. A tax of 12 per cent. was also levied on occupied properties.

Of this, ten-twelfths was for the federal treasury, and the remaining two-twelfths was assigned to the municipality where the property was situated.

4. Another tax of 7 per 1,000 was imposed on all suburban properties, farms, &c. Six-sevenths of this was retained by the federal treasury, and the remaining seventh was for the municipality where the property was situated.

5. The tax on business houses, factories, &c., was divided, seven-eighths to the federal, and one-eighth to the municipal treasuries.

6. The professional license and stamp tax was levied, and received wholly by the federal treasury.

Although from the foregoing it appears as if the proportion set apart for the federal district was not a very large one, a glance at the following table will show that it was rather more than half of its revenue :—

Year.	Federal Duties.	Total.	Per Cent.
	Dollars.	Dollars.	
1891	1,693,480	3,258,899	52
1892	1,635,926	3,204,190	51
1893	1,737,977	3,288,967	53
1894	1,783,276	3,230,670	55
1895	1,893,854	3,395,638	56

In 1896 the Federal Government, continuing the plan of progress for the benefit of the country, suppressed all the inter-State customs offices, thereby abolishing another of the old colonial institutions, which, although a source of revenue to the Government proved a hindrance to commerce, and their removal is now admitted as having been a wise decision on the part of the Government. During that year the proportion of the federal duties received by the municipal treasury was barely 38 per cent. of its revenue.

The following year, still another step was taken by the Federal Government in withdrawing the "*Consumo*" duty, which had been levied for centuries. The proportion of revenue from the Federal Government was therefore reduced a second time, as follows :—

Year.	Federal Duties.	Total.	Per Cent.
	Dollars.	Dollars.	
1897	827,030	3.118,887	26½
1898	874,802	3.364,771	26

The Federal Government, recognising the loss to the municipal treasury, has compensated this difference by a grant of 27 per cent. of the taxes levied in the federal district, and also 1½ per cent. on the import duties throughout the country, and by granting

it subsidies for public works in the various municipalities of the district.

The changes that had been made in the various branches of the local revenue were so complicated that steps were again taken by the Federal Government to simplify them, and in December, 1897, a new law was promulgated by the President of the Republic, which came into force on January 1, 1898, clearly stating what were the contributions and taxes that might be levied by the municipality. These are divided into the following sections:—

1. *Municipal Revenue Proper* comprises water tax, revenues from houses and lands belonging to the local municipalities, capital represented by the property and interest thereon.

2. *Municipal Contributions* leviable on—

(1.) Hotels and boarding houses of all kinds.

(2.) Mercantile and industrial enterprises such as restaurants, confectioners, bakeries, dairies, pawnbrokers, butchers and pork butchers, soapmakers and lard sellers, brick kilns, tobacco factories and dealers, bar-rooms, taverns, and places for the sale of "pulque" (the native beverage).

(3.) Games permitted by law (billiards, bowling, and shooting galleries, ball games, &c.), and public entertainments.

(4.) Legalisation of signatures.

(5.) Fees for examination of weights and measures (metric measures and weights).

(6.) Building material of all kinds.

(7.) Erection or improvement of buildings.

(8.) Paving and drainage.

(9.) Telegraph, telephone, or any other kind of post put up in a public thoroughfare.

(10.) Vehicles, including horses, public and private conveyances, carts, and bicycles.

3. *Proportion* already mentioned, *assigned by the Federal Government.*

4. *Subsidies* from the Federal Government.

5. *Extraordinary and Incidental Revenues*, covering cost of improvements made by the municipality on private property, donations, indemnities, and fines.

The principal branches in which an increase is noticeable during the past year as compared with 1891 are the following:—

	Amount.	
	1891.	1898.
	Dollars.	Dollars.
Slaughter-house dues	75,000	590,000
Tobacco merchants and factories	18,000	132,000
"Pulque" dealers	53,000	143,000
Beer: liquors and wines (bar-rooms), including tax for special licence for opening from 10 P.M. until 3 A.M.	171,000	248,000

The first of these is easily accounted for. A new slaughter-house having been erected within the district of Mexico, a new regulation was issued modifying the tariff which was in force.

Tobacco merchants and factories also show an increase, and will be treated under the head of industries.

The heavy increase in the sale of spirituous liquors, beer, wines, and "pulque" is very noticeable. The preceding figures indicate an increase in the consumption of spirits, and is no doubt attributable to the greater number of foreigners in the city, who are accustomed to take wines, spirits, or beer—whereas the natives (of the poorer classes) consume the national drink "pulque" or home-produced spirit.

In confirmation of this fact, it is sufficient to state that formerly the bar-rooms were only found as an adjunct to the grocers where liquors are sold, and after 9 P.M., when the establishments were closed, no wines or spirits were obtainable until the next day.

The influx of foreigners induced some of the establishments to open independent bar-rooms which were kept open until 10 P.M., or by permission until later on certain nights for the benefit of theatre-goers. Although the tax was 1 dol. for every hour after 10 P.M., and the revenue of the municipality was benefited, the Governor of the district, finding that these establishments were open all night and proved to be centres of disturbance, ordered that they were all to be closed at 3 A.M., and to exact compliance with this order policemen were specially detached for the purpose.

Expenditure. The expenditure of the municipality of Mexico for the past three years has been as follows:—

	Amount.		
	1896.	1897.	1898.
	Dollars.	Dollars.	Dollars.
Cost of administration, including payment to Governor of Federal District	343,676	399,901	339,984
Police	35,415	8,660*	8,182*
Prisons	161,642	168,022	167,510
Hospitals	91,500	7,886*	6,337*
Schools	109,491	..	..
Public lighting	226,346	238,892	250,318
„ works	494,801	559,451	508,233
Service of loan	1,364,931	1,525,833	1,530,555
Miscellaneous	348,310	178,018	537,780
Total	3,176,112	3,086,663	3,348,899

Items marked * are the amounts which the municipality will in future have to pay for those branches of the service, the balance as compared with 1896 having been assumed by the Federal Government.

The increase in the expenditure under the heading of prisons is accounted for by the many improvements and repairs effected in the buildings used for that purpose. **Prisons.**

In the case of schools, the fact that no expenditure appears in the table since 1896 must not be considered an omission, for, as already mentioned, the cost of maintenance of the primary schools, formerly under the supervision of this municipality, is now included in the Budget for the Department of the Interior, or Home Office. **Schools.**

The slight increase in the cost of public lighting is due to the increased number of lights required for the extension of the city in various directions. The following table will show at a glance that this branch has been increased during the last 10 years :— **Public lighting.**

	1889.	1893.	1898.
Arc lamps, 2,000 candle-power ..	300	331	480
„ 1,200 „ ..	..	155	120
Incandescent lamps, 50 candle-power	..	..	49
Gas lamps	501	208	..
Naphtha and turpentine lamps ..	1,130	1,560	1,514
Oil lamps	123	..	..
Total cost in dollars	175,610	223,128	250,318

From the foregoing, it will be observed that as the city has grown in size and importance, the old-fashioned system of oil

lamps has been successively superseded, first by gas and then by electric light. The electric light is supplied by a German company, while the naphtha and turpentine lamps are provided by a Mexican company.

Public works. The public works undertaken by the municipality during the past few years are of such a nature as to require more than a passing mention.

The penitentiary, a large block of buildings fitted up with all modern American improvements, has been built, but is not yet opened for service. Up to the present the different court rooms, which were far too small for the requirements, were situated in the same structure as the common jail, but now that a new and spacious edifice for the use of the judicial authorities has been erected in a portion of the old prison, the prisoners will in all probability be sent to the penitentiary.

The extension of the town beyond what was known as the "city" has also demanded a larger expenditure on the part of the municipality for the drainage, sewerage, and paving of the numerous streets that have been opened. The city gates, which were always closed at night, and where the "octroi" duties were collected during the day, were demolished at the time when that tax was abolished, and now the inhabitants can enter or leave the city at any time of the day or night.

The introduction of water into the city is another undertaking that has been realised.

In former years the water was brought in by means of two fine aqueducts, built by the Spaniards, from the springs situated on the rising slopes of the western side of the valley. These aqueducts with the lapse of years became leaky, and it was then that the project of substituting iron pipes instead of the open conduits was considered. The installation of these pipes has now been completed, and a certain amount of pressure is obtained by pumping the water into a reservoir on the hill at Chapultepec about three miles from the centre of the city. The old stone aqueducts, which served their purpose for about three centuries, have, with the exception of two of the fountains and about six arches, been totally demolished.

Another work of importance is the drainage of the Valley of Mexico. A very detailed account of the magnitude of this work has been given by Mr. Consul Carden, in his two reports of the federal district for the years 1886 and 1890. The tunnel, which is 6¼ miles long, was finished after a great deal of labour, on December 31, 1894, and although not used for the purpose intended, it has had a very severe trial which has proved its solidity. The tunnel is calculated for a current of 618 cubic feet (17·5 cubic metres) per second, but in September, 1898, the great amount of water from the heavy rainfalls of that year, which had accumulated in the Lake of Texcoco, weakened the banks, opened a breach and allowed the water to rush into the canal, forcing an exit through the tunnel, with a current of 1,236 cubic feet (35 cubic metres) per second, thus saving the city from being

inundated. After the waters has passed and the surrounding ground had returned to its normal condition, an examination of the tunnel was made by competent engineers, who reported that it had not suffered any deterioration. The Grand Canal, which was opened in its whole length of 29½ miles on September 18, 1899, has had to be reconstructed in the first 12 miles, owing to the nature of the soil not being solid enough to carry the volume of water.

By the opening of the canal all surplus water not required for the flushing of the sewers is carried off at once, and the danger of the city being flooded by heavy rains has been practically removed.

The drainage and sanitation of the city is a work now being undertaken by the municipality, who have given it out on contract to a French firm. Although, perhaps, not of such gigantic proportions as the preceding, a few descriptive words about the project may be of interest. It consists of five main sewers running parallel through the whole of this city, into which the lateral sewers from the cross streets will empty themselves. These, when finished, will have a fall of 1 metre, and will be connected with the Grand Canal at San Lazaro on the eastern extremity of the city. The water for flushing them will be brought from the lakes of Chalco and Xochimilco at the south-east of the city by a canal, to a point at the west, where powerful machinery has been erected to force it through steel pipes 42 inches in diameter with a pressure of 12 hectograms per square centimetre. The main sewers will be built of pressed brick with mortar prepared of cement and hydraulic lime, and the bottom will be plastered to obtain a smooth surface. In general, the diameter of these sewers will be about 69 inches, but where there is a junction of two sewers it will be increased to 98 inches. The pipes for flushing purposes will be of sheet steel with a diameter of 30 inches, and a thickness of $\frac{5}{32}$ inch, rivetted together longitudinally and covered inside and outside with a preparation of asphalt. The lateral sewers will be of vitrified pipe of 15¾ inches diameter, although in some parts pipes of 23¾ inches are to be used.

Foreign debt.

The Federal Government has a revenue estimated at about 51,000,000 dol., from which it can easily appropriate the sum for its foreign debt. The municipality, as already explained, was dependent on the former for a large proportion of its revenue, calculated at 1,600,000 dol. per year, corresponding to the "Portazgo" duty. In 1896 this duty was abolished by the Federal Government, and in order to cover the deficiency a new law was issued in that same year levying a tax on bakers and confectioners, and also a fixed quota of 188,000 dol. per year to be paid pro rata by the pork butchers. In addition to these extra taxes, the Federal Government assumed the responsibility of charitable institutions, municipal schools, police service, municipal dues, and the expenses for the maintenance of a medical staff in the police wards.

From the following table of comparison it will be seen that the municipality is in receipt of an amount equivalent to that existing before the changes were made :—

	Amount.	Total.
	Dollars.	Dollars.
Revenue formerly received from the product of the "Portazgo" duty, estimated at	..	1,600,000
Revenue as sanctioned in lieu of above—		
27 per cent. of taxes and duties	700,000	
Expenses assumed by the Federal Government	500,000	
Estimated revenue from new taxes	400,000	
		1,600,000

It may be considered that the amount of 500,000 dol. assumed by the Federal Government instead of the municipality is balanced by the additional amount the latter has had to pay for the service of its foreign debt, on account of the depreciation of silver.

This debt, which is the only lien upon its revenue, represents the "municipal loan of the City of Mexico"—5 per cent. It was, with the approval of the Federal Government, placed on the London market this year by the Trustees, Executors, and Securities Insurance Corporation. The loan was for 2,400,000*l.* to be used for the drainage of the valley and other public works. The price of issue was 70 per cent., and the interest, 5 per cent. per annum, was to be paid quarterly. There was also a sinking fund of 1 per cent.

The municipality, under the guidance of the Governor of the district and the Council, are following the example given by the President of the Republic and his Minister of Finance to establish the credit of their country. As the rate of exchange has varied at each quarter when payments have become due, the following table of average for each year will show the immense fluctuation that there has been from one year to another :—

Year.	Total. Expenditure.	Cost of Service of Debt.	Proportion of Expenditure.	Average Yearly Exchange.
	Dollars.	Dollars.	Per cent.	*d.*
1889	2,471,940	421,784	17	36
1890	3,072,878	711,891	23	40 1/16
1891	3,252,812	923,080	28	37 1/4
1892	3,195,436	1,044,118	32	33 1/2
1893	3,252,064	1,170,379	36	29 1/8
1894	3,225,506	1,398,013	43	24 1/4
1895	3,378,696	1,374,698	40	25 1/4
1896	3,176,112	1,364,931	43	25 1/8
1897	3,086,663	1,525,883	50	23 1/4
1898	3,348,899	1,530,555	46	22 7/16

The development in building still continues with great activity. This period of improvement began some 10 years ago, and has continued increasing steadily. The houses in the city were mostly of the old Spanish type—a large yard with the rooms around it. Modern requirements are such that many of these old edifices have been demolished, and those of modern style have been erected. The City of Mexico, which was once called the "City of Palaces," might well retain a sort of relative claim to that title, but only in so far as concerns the buildings occupied by the better families. Like all large cities, it is extending to the west, and what was once the aristocratic and fashionable quarter, is almost given up to commercial enterprise. All the large and handsome courtyards and entrances along the principal streets are now turned into stores and show rooms, and the entrance to the houses is by a narrow passage from the street to the stairways, situated in most cases in the inner part of the buildings. The families who formerly occupied these buildings have now moved to the newer portions of the city, where some really handsome edifices are in course of construction. **Improvement in building.**

The same spirit of improvement which has acted upon private persons has also had its effect upon the municipality. During the last three years it has acquired several large and valuable properties, which have been demolished to make the principal thoroughfares wider, so as to meet the requirements of increased traffic. Among others may be mentioned the line of streets starting from the south-western corner of the main square. This line of streets, belonging to the early period of the Conquest, had on its northern side a series of arcades, which in their early days may have been of great service, but owing to the subsidence of the soil they have been gradually sinking, and this, added to the cracks caused by earthquakes, made them a source of danger to the surrounding property.

The price paid by the municipality for the projecting portion of the 17 properties that were demolished along the above-mentioned line of streets alone was 400,820 dol., with the result that new façades have been made, and many of the properties altered, and it is now the street that has the most modern house fronts in the city. As the value of these properties has consequently increased, proprietors are now able to ask and get much higher rents than formerly. To give an example of this it will suffice to say that stores, shops, and offices that five years ago were rented at 50 to 60. dol. per month, are not obtainable for less than 100 to 150 dol. per month.

It is impossible to give a correct estimate of the value of property in the district. The tax of 12 per cent. is only leviable on houses occupied by their owners or rented, and is calculated by assessment, or on the actual rentals. The increase in this item of the public revenue may be sufficient proof that the value of property has had a corresponding increase.

As no official statistics have been published showing the number or value of houses in the federal district, the following

figures relating to 1889 have been taken from a publication made by Mr. Feliciano Navarro in 1892, whilst the amount of the taxes paid on property in 1889 and 1894 have been copied from the Treasury returns. The corresponding figures for 1899 appeared in a publication of the Fiscal Department of the Treasury. All buildings devoted to Government offices, charitable institutions, &c., are not taxed, and do not enter into the number of houses reported to the Tax Office :—

Year.	Number of Houses.			Amount of Taxes Paid.		
	City.	Suburban.	Total.	City.	Suburban.	Total.
				Dollars.	Dollars.	Dollars.
1889	9,094	4,807	13,901	...	...	821,907
1894	...*	...*	...*	...	...	1,103,870
1899	11,793	20,731	32,524	1,465,141	283,321	1,748,462

* No data obtainable.

This increase in the value of property has been taken advantage of by several American companies, who undertake the sale of land in various parts of the city, and at the same time offer the purchaser some assistance in the construction of the house. That this is a successful enterprise may be gathered from the fact that some Mexican companies have now been organised on practically the same terms as foreign corporations, namely, the acquisition of land by the payment of monthly instalments until the title is obtainable. A small rental is charged while these payments are being made, and many persons have availed themselves of this opportunity of buying lots who otherwise would not have done so.

Since the abolition of the "octroi" duty, it is impossible to obtain any data as to the quantity of building material introduced into the city, the only guide being the contribution of 5 per cent. levied on the same; as this charge is made on value it is not of much service. The revenue obtained from this source in 1898 was 34,785 dol., as against 13,797 dol. in 1897.

Although the increase in building has been very marked, the prices of material used in construction, such as brick, stone, lime, sand, and wood have not risen in proportion. A gentleman who is in a position to know, has been good enough to furnish the following table of prices, which speaks for itself :—

		Prices.	
		1894.	1899.
		Dol. c.	Dol. c.
Iron beams	Per 100 lbs. ..	5 0	6 50
Corrugated iron sheets for roofing . .	„ ..	10 0	13 0
Iron pipe, ¾-in. and 1-in., for water supply*	Per metre ..	0 31	0 53
Galvanised iron pipe	„ ..	0 37	0 40
Lead, which is also used largely in buildings	Per 100 lbs. ..	6 0	13 0

* This increase has been during the last four or five months.

The wages paid to labourers of all classes averaged about 37 c. per day, and 1 dol. to the overseer, and were considered very liberal, but now they range from 50 to 75 c. per day to labourers, and from 1 to 5 dol. to overseers.

Owing to this increase in building there is an extra demand for workmen, and many architects and builders who hold contracts for residences cannot commence work on them on account of the scarcity of labour.

Banking. Banking is carried on in Mexico under the regulations issued by the Federal Government in the year 1897. By this law, known as the "Banking Law of Mexico," and to which all new institutions must conform, the banks are classified under three distinct headings:—(1) Banks of Issue; (2) Mortgage Banks; (3) Bancos Refaccionarios, including mining, agricultural and industrial banks.

Of the 16 banks formed in this Republic since 1888 (two of which have been amalgamated with others) seven have been started within the last two years, indicating that business operations are now much more extended than formerly, and commerce in general has a circulating medium far safer and quicker than the old fashioned "conducta" or train of wagons which were used to convey specie and merchandise from one large centre to another, and were always liable to be stopped on their way, either by the bad condition of the roads during the rainy season or by bands of robbers which infested the country. Mexico is the largest commercial city of the Republic as also the greatest distributing centre of the country. The merchants from several of the more important towns in the different States, though importing some of their merchandise direct from abroad, still make periodical visits to the capital to examine the stocks held in this city.

Many of these merchants from the country are wealthy and of good standing, and can easily obtain credit for the purchase of the merchandise that they buy at periods ranging from three to nine months.

Failures are almost unknown, and the few that there have been recently were of foreign houses; as a rule the Mexicans are careful and prudent in their commercial undertakings, and when failures do occur amongst them they are generally attributable to a sudden and unforeseen depreciation of assets.

Most of the banking operations at the beginning of the century were transacted by British houses then established here. These gradually withdrew and were succeeded by the Bank of London, Mexico and South America, which was started in Mexico about the year 1864, in compliance with a charter granted them by the Mexican Government. The principal shareholders were British, but it was considered in the light of a private banking house with the right to issue bank notes, and it was not until the year 1884 that it began to acquire an official status. In 1890 it received a new charter putting it on the same basis as the Mexican National Bank, which has always been

recognised as an official institution. Under this charter it changed its name to "Bank of London and Mexico," incorporated with a capital of 1,500,000 dol. which has been successively increased to 10,000,000 dol. On January 1, 1900, the capital will be further increased to 15,000,000 dol. The shareholders of this institution represent three-quarters Mexican and one-quarter British capital.

The National Bank of Mexico resulting from a fusion of two establishments that were known as the "Mexican National" and "Mexican Mercantile Banks" in the year 1884, also holds a charter from the Government dated 1897. The capital of this bank is 20,000,000 dol., subscribed three-fifths by Mexican and two-fifths by foreign capitalists, and is exempt from the federal tax.

These two banks are allowed to establish branch houses throughout the Republic, and to issue bank notes, in the case of the London Bank twice, and the National Bank three times, the amount of coin they may have in their vaults. The amount of notes each had in circulation on March 31, 1899, was Bank of London and Mexico, 19,310,704 dol.; National Bank of Mexico, 23,689,413 dol.

By a franchise granted to the foregoing establishments no other bank with a right to issue banknotes can be organised in the federal district until the present law lapses in 1927, but deposit banks or any of a similar nature can be formed.

The present rate of interest charged by the bank is from 8 to 9 per cent. per annum.

There is but one mortgage bank in the Republic, and that is in the City of Mexico, and is known as the "International and Mortgage Bank of Mexico." This bank originally started in 1883 under the name of the "Banco Hipotecario Mexicano" but did not receive its present charter till 1891. Its capital, 5,000,000 dol., is subscribed principally by Mexican capitalists. Although it is not authorised to circulate bank notes, it has the privilege of issuing two kinds of paper credit, namely, mortgage bonds amortisable in half yearly drawings and bearing interest not exceeding 7 per cent. per annum, and interest bearing certificates repayable at dates varying from three months to five years.

The dividends paid by the three foregoing banks during the past nine years are as follows:—

Year.	Bank of London and Mexico.	National Bank.	Mortgage Bank.
	Per cent.	Per cent.	Per cent.
1890	20	14	..
1891	20	14	4½
1892	16	14	5
1893	16	16	5
1894	14*	15	4½
1895	14	17	4
1896	14	18	4
1897	9†	14	3
1898	9	12‡	5

* Capital increased to 3,000,000 dol.
† Capital increased to 10,000,000 dol.
‡ Amount of 5 dol. passed to share capital.

The number and names of banks at present operating in the Republic, all of which have obtained special charters from the Federal Government, are shown below. With a view of showing the increase in the monetary value of the Mexican banks and their credit, the date of the formation of each is given, as also the amount of capital reported on March 31, 1899, and the value of notes in circulation :—

Bank.	Date of Formation.	Capital at Formation.	Capital on March 31, 1899.	Notes in Circulation, March 31, 1899.
		Dollars.	Dollars.	Dollars.
Mexican, Chihuahua ..	1888	806,509	..	..
Mining, Chihuahua ..	1888	600,000	1,500,000	1,562,068
Bank of Chihuahua ..	1889	517,586	..	..
Commercial, Chihuahua	1890	600,000	600,000	371,237
Banco Yucateco ..	1890	700,000	1,250,000	3,723,539
Mercantile, Yucatan ..	1890	500,000	750,000	1,407,079
Bank of Durango ..	1891	500,000	1,000,000	526,865
Bank of Nuevo Leon ..	1892	600,000	780,000	1,197,581
Bank of Zacatecas ..	1891	600,000	600,000	473,699
Bank of State of Mexico	1897	1,500,000	1,500,000	382,000
Bank of Coahuila ..	1897	500,000	1,600,000	904,240
San Luis Potosi ..	1897	1,100,000	1,100,000	711,355
Bank of Sonora ..	1898	500,000	500,000	605,000
Occidental de Mexico ..	1898	500,000	500,000	93,030
Mercantile of Vera Cruz	1898	2,000,000	2,000,000	2,238,825
Bank of Jalisco ..	1898	500,000	500,000	225,610

By the regulations established by the banking law already referred to, the mortgage bank is only allowed to loan money on mortgages, but the Bank of London and Mexico and the National Bank can loan out at interest with the following prescriptions :—

The document must be endorsed by two signatures at least, or by a collateral security, and for a term not exceeding six months.

Although this system may be quite in accordance with the law it has its drawbacks. Persons who might, and very often do, make applications for loans, do so with two primary objects in view, namely either to cover an account for duties on merchandise or such like, or else to give a greater impulse to their business.

For houses of standing and sufficient capital it is quite practicable, as they can easily recover the amount and pay it off in the given time, but for those newly established or for firms of small capital it is quite a different question.

Many of the larger business firms are now constituted as limited companies, in whose articles of partnership a clause is inserted, by which none of the partners are allowed to give either their own name individually, or that of the firm as a guarantee. These conditions preclude the smaller houses from applying to them. If, however, they by chance do obtain it, at the end of six months comes the question of renewal. The previous endorser may refuse the signature, or the bank may object to renew the document, leaving them at the mercy of one or the other.

This is a question of vital importance to commerce in general, but more especially to new houses starting in business that have to compete with larger firms already established, and is one that might be solved by the many private banking firms in the city, but as these have to a certain extent adapted the provisions of the banking law to their respective operations, the result has been that commercial transactions are very much hampered.

In October, 1898, an agreement was made with the Mexican Government for the establishment of a new bank which was to be considered as coming under the provisions specified for the third class of bank, and in its original contract it was called the "Banco Refaccionario." This name was shortly afterwards changed to its present one "Banco Central Mexicano," and the bank was opened for operations on February 15, 1899.

Like the mortgage bank it is not allowed to put bank notes in circulation.

Its principal operations are: to discount documents, advance money, carry current accounts, issue drafts, and collect bills in all towns in the Republic, as also abroad, and in fact to do a general banking business. It may also facilitate money to mining, industrial and agricultural enterprises for a term not exceeding two years; it can also issue cash bonds ("Bonos de Caja"), bearing interest for periods varying from three months to two years.

The capital, 6,000,000 dol., is subscribed half by a syndicate composed of European and American capitalists, and the remainder by those of this country.

The shares of the bank are divided into three classes:—(1) ordinary shares held by the various State banks in the Republic, and which are not available to the general public; (2) ordinary shares issued to the public; (3) founders' shares.

As all the banks in the various States of the Republic must be shareholders, the Banco Central, acting as their agent in this city, receives their notes at face value. This, in itself, is a great

step towards facilitating commercial operations, as formerly merchants often refused to accept a bank-note issued outside the city of Mexico, as the rate of exchange from one town to another varied from ¼ to as much as 10 per cent.

There are also several firms, mostly merchants who undertake banking operations, but their chief business is importing foreign goods for distribution in the country, and the export of domestic produce. These houses are mostly German and Mexican.

Throughout the whole of the Valley of Mexico rivers are of very little service as motive power, though there are a few factories situated on the south-western and southern slopes of the mountains that are able by means of dams to procure the necessary power to move their machinery. Industries.

During the months of March, April, and May the supply of water from the rivers is diminished to such an extent that the factories have to rely upon steam-power.

The city of Mexico, although the largest commercial and distributing centre in the Republic, cannot, even including the suburban municipalities, be considered a manufacturing district, as will be observed from the following table which gives the number of factories and other industries within its limits:—

Factories and Industries.	Number.		
	City	Suburbs.	Total.
Cotton, spinning and weaving ..	5	6	11
Print works	3	1	4
Woollen..	3	..	3
Linen, spinning and weaving.. ..	1	..	1
Paper	..	3	3
Bricks and manufactured clay ..	1	2	3*
Compressed cement tiles	1	..	1
Breweries	1	..	1
Distilleries	6	..	6†
Potteries	2	..	2
Tobacco..	4	..	4†
Chemicals	4	..	4
Iron and brass foundries	5	1	6
Petroleum refineries	1	..	1

* Does not include native brick kilns.
† Does not include small establishments.

The only statistics published are those relating to the output of cotton and tobacco factories, whose returns may be considered reliable as they serve for the basis of pro-rata taxation. Their output for the year 1898 was:—Manufactured cotton goods, 237,000,000 square yards; cigarettes, 108,983,756 packets (equal to 3,623,853 lbs. tobacco); cigars, 18,198,606 (equal to 227,153 lbs. tobacco).

Most of the other industries that have been started within the last two or three years are not of sufficient importance to require special mention.

As electric motive power affords many conveniences it is very probable that new enterprises will be started in the near future.

Agriculture.

Agriculture is one of the few branches of industry which has so far received attention on the part of the inhabitants not only in the Valley of Mexico, but throughout the Republic, and which is destined undoubtedly to be as productive as mining.

Unfortunately the returns of agricultural products of the Republic are not sufficiently complete to serve as a comparison with the statistics of other countries; as farmers always render lower returns than the exact production, being under the impression that they would be overtaxed if they gave the amount of the actual crop.

The extent of agriculture in the Federal District of Mexico may be obtained from the following figures:—Six properties where cereals are grown; 16 properties for stock-raising; 16 properties for the cultivation of the maguey and the production of "pulque."

The cereals which are grown in the federal district are quite insufficient for the requirements of the capital, and, though no statistics are published to show the amount imported, it is quite rational to suppose that the amount is the same as it was 10 years ago, or about an average of 540,000 bushels of barley, 206,000 bushels of wheat flour, and 103,000 bushels of wheat for grinding in the mills within the district.

The annual produce of the principal crops grown in the federal district for the years 1895–97 inclusive (these being the last for which any official returns have been published) are as follows:—

Articles.		Quantity.		
		1895.	1896.	1897.
Barley	Bushels ..	121,918	89,166	255,491
Maize	„ ..	673,616	555,445	1,823,475
Wheat	„ ..	33,078	9,181	6,833
Beans	„ ..	90,851	32,323	74,011
Peppers..	Lbs. ..	37,754	24,700	54,601

NOTE.—The foregoing figures are taken from official statistics, but there appears to be some discrepancy in them.

There are as already mentioned 16 properties devoted to stock-raising, but none produce animals that could be considered as prize-winners, although of late years foreign stock has been imported for breeding purposes. To promote farming and agriculture, the Government has erected a building where exhibitions are held two or three times a year, and prizes are awarded to the exhibitors of the best stock and farm produce.

Several dairy farms have been established within the district by foreigners, but the largest supply comes from the State of Mexico.

Poultry farming is still in its infancy, though of late years several establishments have been opened and are now in very promising condition. The price for good poultry is high and is increasing yearly. Formerly the price for pullets was about 12 to 15 c. each, now it is difficult to obtain anything for less than 45 c. Turkeys are worth from 3 to 5 dol. each. Fowls' eggs were worth 24 c. for 13, now only from five to six can be obtained for the same price. Tame ducks are very seldom served at table, as their price is double that of the wild species which abound on the lakes.

Market produce is raised in very fair quantities throughout the district, but more especially around the lake of Xochimilco and along the banks of the Viga Canal, whence transport by boats is cheap and convenient. The population of the city being on the ncrease, this produce is quite inadequate to cover the demand, besides being of an inferior quality.

A point worthy of consideration in regard to this industry is that the natives who are owners of many of these vegetable gardens employ no labour. Wages are also very low, from 25 to 50 c. per day. Fruit is very abundant in the federal district, but is very small, and being picked green is often tasteless. Hitherto, no one has undertaken to improve the quality by cultivation or by grafting. It may be interesting to state that strawberries are obtainable nine months in the year.

Alfalfa, or lucerne, is a very productive crop and large tracts of land are planted with it, as after the first cutting the plants will yield a crop every month for several years. The cold, however, stops its growth in winter.

Another branch which is also very productive and carried on solely by the natives is apiculture. In nearly all the small gardens in the suburbs are found primitive hives made out of old packing cases or boards nailed together. Though no returns are available as to the production, it may be mentioned that the wax is clarified and sold in large quantities to the numerous establishments where wax candles are made for the churches; besides a certain amount is exported. The exports of beeswax during the past three years were respectively:—1896, 18,113 lbs.; 1897, 16,000 lbs.; 1898, 30,465 lbs.

Trade and commerce may be subdivided into several branches; the principal only will be touched upon. The remarks made by Mr. Consul Carden in his report of the federal district for the year 1890 are just as applicable, with rare exceptions, to the trade of Mexico of to-day. **Trade and commerce.**

Under the heading of industries the various factories for *textile goods of cotton, linen, and wool* have been enumerated, but as no returns are published it is impossible to state what is the output of either woollens or linens. **Textile goods.**

By reference to the table on p. 35, a better idea can be obtained as to the nationality of the owners of the various factories. All of these with the exception of the linen factory, which is a private enterprise, are owned by companies registered

in this city. The largest manufacturing company also owns factories in the neighbouring States, and the greater part of the output from these mills in the shape of unbleached material is brought to the printing establishments in this city, of which there are three, one being the property of the same company: the other two are owned by companies having factories in the States of Jalisco and Puebla.

The produce of the native mills and what is imported finds its way into the large drapers or dry-goods stores in this city, where it is retailed to the smaller establishments, as also to their branch houses in several of the large towns in the Republic, such as Guadalajara, Puebla, &c. Of these dry-goods stores there are 27 in the City of Mexico, without counting a number of smaller shops and those in the suburban districts, whose stocks are obtained from them, either direct or through brokers, and are continually being replenished so that their assortment is always of the latest designs.

The figures are obtained from official publications (where perhaps to facilitate matters for the imposition of taxes, all houses dealing in any of these articles are classified together) and show that 18 of the establishments are French, three German, three Spanish, two British, and one Swiss. With the exception of the two British houses, which are simply agencies for the sale of well-known brands of sewing threads, they are large wholesale and retail drapers where everything made of cotton, wool, linen, or silk, either in piece or as manufactured articles, can be found. Nearly all receive shipments from Great Britain as well as France and Germany, either direct or by orders given to travellers from the large European houses.

Within the last month a large mercantile establishment, something like the co-operative stores in London, has been opened in this city, in which not only dry-goods but several other branches are combined. Whilst on the subject of cottons it may be as well to mention that recently a factory has been established for making cotton sewing thread, whose trade mark, registered in Mexico, is similar to that of British manufacture, and misleading to the general public, but not sufficiently imitated to infringe the foreign mark.

Iron and steel.

Iron and Steel, being a branch which is of as much interest to British manufactures as the preceding one, it may be as well to study it under its various headings, namely, hardware stores or ironmongers, machinery warehouses, and agencies.

Hardware Stores and Ironmongers.—There are six principal establishments in the city (four German, one Spanish, and one Mexican) as well as a large number of smaller (Mexican) houses who purchase wholesale from the former.

The assortment of merchandise carried by these six houses includes all kinds of furnishing hardware, nails, screws, bolts, cutlery, tools for agricultural and industrial purposes, mining steel, iron pipes, &c., the bulk of which comes from Germany and the United States. British hardware and cutlery are received in very small proportions.

These houses command nearly the whole of the hardware trade in the Republic, by the establishment of branches in the large cities and keeping them well supplied. In these cities the hardware stores also have a full assortment of groceries, dry-goods, stationery, and in some places are the principal mercantile establishments in the town.

Machinery Warehouses.—The hardware stores mentioned in the foregoing paragraph contain a complete stock of machinery in independent establishments. This arrangement is necessary for taxation purposes, and these will be found entered on the list under the head of machinery warehouses. All carry an assortment of engines, boilers, pumps, agricultural and electrical machinery of all kinds, leather belting, machinery for mining and industrial purposes, &c. Sewing machines are also included under this heading. The greater part of all this machinery comes from the United States, but many of these houses have some machines of British manufacture, which owing to their weight do not find as ready a sale as those of American make.

Agencies.—It is doubtless under this head that the greater part of the sales of iron and steel, machinery, &c., are effected. Out of the 24 houses, assessed by the Contribution (Tax) Office, 12 are British, 10 American, and two Mexican representatives of foreign firms. Although many of these carry samples and even a small assortment of smaller articles, others are simply offices, where by means of catalogues, photographs and price lists, sales of machinery are occasionally made. This machinery in all probability would have to be manufactured when ordered, and cannot be delivered in less than from three to five months from the date of order if from England, as against two to three if from the United States.

Under the heading of iron and steel are included 15 brass and iron bed and matress factories. Of these the principal are two Spanish and one American, all of whom make iron and brass bedsteads and woven wire matresses. The brass furnishings for these beds come from abroad, but the ironwork is all made in this city.

The prices at which these home-made bedsteads can be sold are such that the importation of those of foreign manufacture is undoubtedly decreased thereby.

Iron Safes, which come under the import of iron and steel, are found in nearly all the hardware stores; but there are two American firms that carry large stocks of safes of all sizes, from the small iron box for money or deeds up to safes suitable for vaults. With very few exceptions these are all of American manufacture.

Groceries and liquors.

As groceries and liquors are so closely united it is impossible to deal with them separately. All the grocers keep a stock of wines and liquors, but there are a few places where only wines are obtainable. Most of the grocers' establishments have a bar-room attached. There are nearly 500 of them in the federal district, but the most important are situated in the centre of the city and number about 60, the largest proportion of them being owned by Spaniards.

The assortment of their stock includes some provisions of British manufacture, but the origin of the bulk is France, Spain, and Italy.

Lately American provision merchants have been developing their interests and are now doing a considerable trade, their products being more reasonable in price and more varied than those from other countries.

There are 20 wine merchants in the city where wines exclusively are sold, in casks and in bottles; of these 12 are French and the remainder are divided between Spaniards, Italians, and Germans. There are three Mexican wine dealers selling the products of native vineyards situated in the States of Guanajuato, Chihuahua, and Durango.

Nearly all the British commission agents in this city are representatives of Scotch whisky distilleries, but American and Canadian brands, made of rye, are in greater demand.

Whiskies, spirits and liqueurs are made in the six distilleries in the city. Some of the products are sold with labels closely imitating foreign brands, which are not registered in Mexico.

The importation of foreign beers is decreasing yearly. This is attributable to the following causes: firstly, because the duties are leviable on gross weight; secondly, the rate of exchange; and thirdly, owing to the establishment of new breweries in different parts of the Republic. The retail price of Mexican beer is 25 to 35 c. (6*d.* to 8*d.*) per half pint bottle, and foreign beers cost double that price.

Candles are also sold at grocers and are nearly all of Dutch or Belgian manufacture. English composite candles, as a rule, are higher in price than those of Continental manufacture. There are two stearine candle factories in the city. Candles used in the Roman Catholic churches and cemeteries are made of native wax.

Chemicals.

In the customs tariff, the heading of chemicals includes all kinds of drugs, patent medicines, perfumes, colours, &c., and as this seems to be a branch to itself the same heading is now employed to cover the same articles, which are obtained in all the large wholesale and retail druggists. There are 12 of these establishments in the City of Mexico, two of which also have factories for making acids and chemicals. There are five manufacturers of fancy soaps and perfumery, whose products are a very close imitation of European marks.

There are several chemists, the principal being Germans and Mexicans, but in many of the large druggist establishments a responsible professor of chemistry, appointed by the Board of Health, is always on hand for such services as may be required.

Glass, china, and earthenware.

There are 11 glass, china, and earthenware establishments in the city, two of which deal exclusively in glassware of native manufacture. Five others are agents for native pottery factories situated principally in the State of Puebla. Another is a large establishment formed with Mexican capital; it imports all its glassware, but a great deal of the china and earthenware is made in its own factory, which is well equipped with modern machinery, and many of the workmen are English potters from Staffordshire.

The three remaining establishments (one Swiss, one German, and one French) carry very large assortments imported from France, the United States, Germany, and England, including the ordinary table wares, statues, vases, and all kinds of ceramic ware for ornamental purposes.

Paper and its branches.

There are three paper factories in the federal district, one British, one Spanish, and one Mexican, and also three cardboard factories owned by Mexicans.

As it is impossible to define the two different branches of stationers and booksellers, it has been considered advisable to divide them into three distinct headings: stationers, in which only stationery of all kinds is found; booksellers, who only deal in books and magazines, and those who combine the two branches.

Under the heading of stationers are included the deposits of two paper factories, situated in the federal district and in the State of Mexico. There are 11 large stationers, where paper of all kinds made in America, Great Britain, Germany, and France is procurable, as also all kinds of blank books, many of which are ruled and bound in their own workshops, ink, &c.

There are 10 large booksellers who carry only an assortment of books, mostly French and Spanish, for use in the Government schools and private colleges.

There is only one establishment that combines the two branches, it is American, and has its own printing office. English books, nearly all printed in America, are only obtainable at three of the booksellers and are usually expensive.

The newspapers that are published in the city (three edited and controlled by Americans) with very few exceptions employ home-made paper. This being of an inferior quality suits them better than foreign printing paper, which is too expensive for cheap literature, the price of some of the daily papers being only 1 cent (½*d.*).

There are seven houses dealing in wall papers, carrying selections made in France, Switzerland, Germany, Great Britain, and the United States. This trade is not confined to special houses, as large assortments are kept in stock by the leading druggists, drapers, and stationers.

Among miscellaneous articles the following require special mention, furniture, saddlery, harness, and boots and shoes.

No furniture of any importance is brought from Great Britain. American furniture, especially for offices, is imported by the four wholesale dealers (two American and two Mexican) in greater quantities every year. France exports supplies of fancy chairs and tables which are imported by the leading drapers and hardware stores.

There are two establishments where saddlery and harness, and all the accessories for horses are to be found. The hardware stores also have a fair assortment of the same articles. Most of the harness is made in the United States, while saddlery comes from Germany and Austria.

As already mentioned in a former report, the American boot

and shoe trade is yearly increasing. Not only do the four American stores carry large assortments of boots and shoes of all kinds, but American makes are also to be found in all the leading Mexican establishments. The large drapers carry a stock of ladies' boots and shoes of Parisian make. The better quality of boots and shoes manufactured by Mexican firms are of calf-skin imported from France, while native leather is used for the soles and heels. The price for boots of this quality varies from about 5 to 8 dol., while those of American manufacture are as high as 12 dol.

Insurance companies.

Although not exactly commercial there is a department that calls for special mention, namely, insurance, especially so, as British companies predominate. 29 companies: 21 fire, 5 life, 2 marine, and 1 general (except life) have offices in this city and can be classified as follows:—

Fire Insurance Companies: 7 British companies with British representatives,* 7 British companies with German representatives, 1 British company with French representatives, 4 German companies with German representatives, 1 Swiss company with a German representative, and 1 French company with a French representative.

Life Insurance Companies: 3 American companies with American representatives, 2 Mexican companies with head offices in this city.

Marine Insurance: 1 British company with British representative, 1 German company with German representative.

The company doing a general insurance business is formed with British and Mexican capital according to the laws and requirements of Mexico, and has its head office in this city. The board of directors is composed of residents of this city, and the manager is an Englishman.

All the insurance companies have sub-agencies throughout the Republic.

Trade marks.

Before leaving this commercial section it may be as well to say a few words in regard to trade marks. As a general rule, those British houses whose trade marks are registered in Great Britain have omitted to have them also registered in the commercial register of Mexico.

It can scarcely be considered as an oversight as the attention of British manufacturers has more than once been called to this fact, not by their agents but by merchants of this city, who, though receiving the genuine article direct from the factory, are unable to compete in price with the imitations, made in this country or imported. No action can be taken in many of these cases, either by the commission agent, or by the merchant who carries the stock, and they have to allow the fraudulent production to remain on the market. The general public when they find that they have been deceived, usually make a claim upon the merchant who deals in the genuine article, with the result that his sales are affected

* Of these there are two companies, one of which has a life department and the other an accident branch.

and his reputation questioned, through no fault of his own. Such being the state of things, the attention of manufacturers and dealers is seriously called to the advantages of having their trade marks properly registered, under the regulations of the "Trade Mark Law" of Mexico, for their own protection.

Openings for British interests.

A careful study of the foregoing remarks, concerning the existing conditions of trade, manufactories, industries, and agriculture in the federal district of Mexico, will no doubt demonstrate to British manufacturers and merchants that the remarks made by Mr. Consul Carden in his various reports on Mexico, as to the relative paucity of British interests in this country, and his suggestions as to the steps that might be taken to develop them, were not made without reason.

As shown by figures published in the trade report for the year 1898 the imports from Great Britain in that year were 17¾ per cent. of the total imports into Mexico, which is about 1 per cent. under the average for the past five years. Those of France were 12 per cent. in the same year, as against an average of 14 per cent.; while Germany, whose commerce is extending very considerably, sent 11½ per cent. of the total merchandise. This amount was 1½ per cent. in excess of the average of the past five years.

Mexico, whose steady progress, both commercial and general, during the past 20 years has more than once been remarked upon, and whose ports have been opened to the traffic of all the world, is now a field for new enterprises, many of which, unfortunately, have been anything but an advantage to her.

Industries, agriculture, and even commerce are open for investment of capital, and there is no doubt that companies properly managed by able men, would yield as good a return as in any other country.

For young men, especially in co-operation, who possess a thorough knowledge of Spanish, and are willing to rough it at first, Mexico presents brilliant prospects, but at the same time, a word of warning must be given. Want of capital is no doubt the greatest drawback for any one, but if the large firms they might represent were to aid and assist them in covering the expenses of the establishing of an office, they would, so long as they were steady, be able to create a very comfortable position.

All industries, perhaps with the exception of mining, are still in their infancy, and the same, with certain modifications, may be said of agriculture.

In both of these, individual enterprise is impossible, as it is not only the cost of the land that one has to count upon, but expenses of maintenance and development. This of course is the first expense, but opportunities are never lacking to procure very good and productive properties at a small cost. If unimproved property, the cost of enclosing it is an item which must be considered, and later on buildings and machinery will require an additional outlay which can only be made by persons with a fair capital or by organised companies.

Communications.

Facilities for transport are increasing every day, and the country is opening up in every direction by railways in operation and construction.

Living is often a question of importance, but for people who can do without luxuries the cost is no greater than elsewhere.

Life and property are as secure as in London, and so long as the laws and regulations of the country are complied with and the natives treated with consideration, no danger need be apprehended.

One of the greatest needs for the development of British interests in Mexico is the prompt establishment of a direct and quick monthly service of first-class steamers between a British port and the Mexican Gulf, touching only at Havana, both on the outward and homeward journey. A steamer going some thirteen or fourteen knots could easily accomplish the journey in from 16 to 17 days, and the want of such direct communication, both for passengers and freight, is so manifest that any company starting such a line of steamers at reasonable rates, would earn very large profits. The present time is specially fitted for the introduction of such service, as the approaching Paris Exhibition would certainly fill such vessels both with freight and passengers for the whole of next year, and the trade once started, the advantages would be so apparent that the venture would undoubtedly be successful.

SYNOPSIS of the Leading Houses in the Principal Branches of Trade and Commerce in the Federal District, showing Nationalities.

FACTORIES AND INDUSTRIES.	British.	Mexican.	American.	French.	German.	Spanish	Belgian.	Italian.	Swiss.	Others.	Total.
Cotton	...	2	...	4	...	5	...	...	...	...	11
,, thread	...	1	...	...	...	...	...	...	...	...	1
Print works	...	...	...	...	...	4	...	...	...	...	4
Woollen	...	...	...	...	...	3	...	...	...	...	3
Linen	1*	...	...	...	...	...	...	...	...	...	1
Paper	1*	1	...	1	...	...	...	...	...	...	3
Brick and manufactured clay	...	...	3	...	...	...	...	...	...	...	3
Compressed cement tiles	...	...	...	...	...	1	...	...	...	...	1
Breweries	...	...	...	...	1	...	...	...	...	...	1
Distilleries	...	2	1	...	...	3	...	...	...	...	6
Potteries	...	2	...	...	...	...	...	...	...	...	2
Tobacco	...	6	...	...	...	4	...	...	...	...	10
Chemicals	...	1	1	...	1	...	1	...	...	...	4
Iron and brass foundries	1*	2	...	1	...	...	...	2	...	...	6
,, ,, bedsteads	...	...	1	1	...	2	...	...	...	...	4
Compressed asphalt	...	1	...	...	...	...	...	...	...	...	1
Petroleum refinery	...	...	1	...	...	...	...	...	...	...	1
Match factories	...	1	...	...	...	3	...	...	...	...	4
TRADE AND COMMERCE.											
Banking	2	1	1	...	4	2	...	...	...	...	10
Drapers	2†	...	...	18	3	3	...	...	1	...	27
Hardware and machinery	...	1	9	3	6	2	...	...	...	...	21
Agencies	2	5	5	2	6	...	...	...	...	4	24
Iron safes	...	...	2	...	...	...	...	...	...	...	2
Groceries and liquors	1	...	4	7	3	30	...	2	1	1	49
Druggists	...	3	...	2	3	...	1	1	...	...	10
Chemists	...	3	2	1	3	...	...	...	...	...	9
Glass and china	...	6	...	1	1	...	...	...	1	...	9
Stationers and booksellers	1‡	5	3	3	2	7	...	1	1	...	23
Wall paper	...	3	...	7	...	...	1	2	1	...	14
Furniture	...	2	2	...	...	...	...	...	...	...	4
Saddlery and harness	1	...	1	...	2	...	...	...	...	...	4
Boots and shoes	...	12	4	...	...	...	...	...	...	...	16

* These are all private enterprises.
† These are but agencies of British sewing threads.
‡ This is a warehouse for paper made in owner's factory.

Notes on the Territory of Tepic.

Extension. Population.

The territory of Tepic which is dependent on the Federal Government, has an area of 30,000 square miles, and an aggregate population of 146,805 in the six "Partidos," or districts, into which it is sub-divided. The foreigners in the Territory of Tepic are 10 English, 34 Spaniards, 29 Germans, 7 Americans, and 8 French. About half the territory is available for cultivation, the rest is unexplored and inhabited solely by the "Coro" and "Huichol" Indians, who live by hunting, and still carry the bow and arrow.

Agriculture.

The cultivated part of the territory produces 2,200,000 bushels of maize or indian corn, 112,300 lbs. of coffee, 1,565,266 lbs. of cotton, 1,839,532 lbs. of sugar, and 2,211,214 lbs. of rice; the output of rice and sugar is entirely in the hands of an old established Spanish house; part is consumed locally and the remainder is sent to the neighbouring States of Sinaloa and Jalisco.

Manufactures. The cotton is entirely consumed in Tepic by the two factories of Bellavista and Jauja, each of which has 170 looms. Bellavista owned by a Spanish firm produces about 4,200,000 yards of grey cloth annually; the English firm of Barron, Forbes, and Company are the owners of Jauja whose products, bleached calicoes, have a great demand throughout the Republic.

Mining. Mining is at a standstill, there being only one mine in the territory employing more than 20 men. There is a general opinion that quicksilver mines exist in some of the districts.

I am sorry I am unable to say anything favourable as to the imports of British goods, there not being a single English house either in the territory or in the neighbouring States. Very few foreign goods are to be seen, as the people are satisfied with the native prints, calicoes, and woollen goods, being in fact too poor to buy anything else. The large German importing houses in Mazatlan, and the French houses in Guadalajara, supply the better kind of hardware. English tools are acknowledged to be the best, wearing better, but there are none to be had, for what is not German is of American manufacture.

Imports. The value of the imports to the port of San Blas, in the year 1898–99 was 143,675 dol., as against 91,252 dol. for the fiscal year ending June 30, 1898. The principal articles of import are machinery, iron pipes, and bar iron, mostly imported from the United States. As no statistics are as yet published it is impossible to give the amount of each.

Exports. The value of the exports from the port of San Blas in the fiscal year 1898–99 was 228,723 dol., as against 284,661 dol. for the year 1897–98. The principal articles of export are rubber, hides, and tobacco, which is shipped to Salina Cruz, whence it finds its way to the Valle Nacional, and is there used by the manufacturers in conjunction with the product of San Andres Tuxtla. The district which produces the largest amount of tobacco is Campostela. The annual production is about 809,000 lbs., and that of Santiago Ixcuintla 405,650 lbs. Most of this has been grown from Cuban seed, and under the supervision of a Cuban. The price paid for it at the plantation averages 2 dol. 50 c. per 25 lbs.

Land suitable for tobacco culture can be bought at 2 dol. to 2 dol. 50 c. per hectare, which will hold about 17,000 plants, producing about 13 ozs. per plant.

150,000 cigars were sent from Tepic to England and Germany.

There are large tracts suitable for rubber culture (where it is now growing wild), as also for vanilla, which can be obtained for small prices, but unfortunately there are no means of communication. The roads are bad, and there are no railways at present.

Shipping. No returns of vessels arriving at the port of San Blas have been published, but the average number is from 200 to 250 a year of all nationalities.

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DIPLOMATIC AND CONSULAR REPORTS.

NETHERLANDS.

MEMORANDUM ON

COMMERCE IN THE NETHERLANDS.

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1900.

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Memorandum on Commerce in the Netherlands by Mr. W. S. H. Gastrell, Commercial Attaché to the British Legation at the Hague.

(Received at Foreign Office, November 27, 1900.)

General. The geographical position of Holland has always been most advantageous for the extension of commerce. It has the double advantage of a sea-coast and of commanding the mouths of the Rhine, one of the chief waterways of Germany. Trade has, for centuries past, played the leading part in the economic position of the Netherlands, and does so still. The natural situation of Holland necessarily makes it so; for not only has it its own proper trade, by which is meant its imports for home consumption and its exports of domestic produce, but also, what is of equal importance to it, an immense transit trade which is derived from the peculiarity of its lying in the direct route between Great Britain and the German Empire, both of which countries have an enormous commerce with each other. To this unique and advantageous position Holland owes a great part of its prosperity; and as the trade of those two Powers goes on augmenting year by year, so the immense transit trade of the Netherlands rolls on in ever-increasing magnitude. Of course a great part of British commerce with Germany goes direct by sea, and similarly a large part of German trade goes direct to British ports, but the enormous amount traversing Holland by rail in both directions is clearly indicated by the disparity between German and British statistics, as, for instance, in the remarkable difference between the figures of German exports to the United Kingdom and of British imports from Germany. The sea-borne trade coming also to the Netherlands from countries other than Great Britain is immense; and the greater portion of that commerce is not for Dutch consumption but again is merely *in transitu* for other nations. The importance of this transit trade is also shown by the Dutch statistics which, though they may not be correct (owing to the unreliability of figures dealing with many goods entering free of all duty), demonstrate clearly its large proportion to the whole, or general trade. Dutch commerce, therefore, must always be considered from a standpoint somewhat different from that from which one is accustomed to view the imports and exports of most other countries. Perhaps few persons realise

that the total area of the Netherlands does not exceed 12,600 square miles, and that its total population to-day is only about 5,000,000 people. That such a small country geographically should have accomplished so much commercially in the past and is still so important in the present, is a matter for admiration. Its extensive colonial possessions have, of course, helped considerably in this respect; for their total area is about 785,000 square miles, with a population of some 35,500,000.

As late statistics on Dutch trade have been given in recent reports, I do not deal with them here, but rather with the question as to the position of British commerce in the Netherlands, and particularly as to whether it labours under any disadvantages for its extension.

Trade competition.

From careful inquiries made as to the extent to which foreign trade is displacing British goods in Dutch markets, there appears to be a large amount of unnecessary encroachment often due to the apathy of some British manufacturers and exporters. In the van of our foreign competitors in this respect stands Germany. One reason for the extension of German commerce is, undoubtedly, the employment by British firms of foreigners for their commercial travellers on account of their better knowledge of foreign languages. I am told on good authority that such travellers will produce to prospective customers the catalogues and price lists of their employers in the United Kingdom, but that when the would-be buyer complains of the high price of the articles, the foreign traveller says he cannot sell them cheaper, but that he has another catalogue and price list with him of so-called Anglo-American goods. In reality they are often similar German goods of lower price and perhaps of inferior quality. The customer will, however, often prefer them to the better British goods at a higher price; and he thus gets into the habit of buying foreign goods instead of British as formerly.

Persons having local knowledge state that there are three causes operating to facilitate the disposal of German as against British goods in Holland:—

1. That the Germans have usually resident representatives in the country.

2. That they mostly pay the freights and duty on the goods ordered, included in the price quoted.

3. That the sum charged for packing and for the cases, &c., is considerably lower than that ordinarily charged by British firms for the same thing.

Another minor point is that the invoices of goods from the United Kingdom often do not reach the consignees before the actual arrival of the goods in the Netherlands, which omission entails certain customs difficulties, and may involve additional and otherwise avoidable expenses. Foreign firms are far more careful in this respect.

In spite of all that has been said and written to disprove the accusation made against some British firms of neglect and indifference to oblige foreign customers, I have in Holland also

found much testimony to this unfortunate habit of some British houses. It has been by the maintenance of such a regrettable attitude that German and Belgian firms appear, in many cases, to have been able to obtain important contracts in Holland, such as the gas and waterworks of Amsterdam, the gasworks of Rotterdam and Haarlem, though British firms were the first in the field with tenders.

It appears to be undesirable to tender much by letter from abroad. British firms who wish to obtain such contracts should send over some reliable person as their representative to himself look after the matter, and, if necessary, tender through a resident Dutchman. It is especially by employing Dutch engineers as intermediaries that certain foreign firms seem to have succeeded in obtaining extensive contracts in Holland. Foreigners can tender direct, but they must give, when doing so, some technical place of domicile in the Netherlands, usually bankers, and they have also to obtain as security two well-known householders, or persons known locally to the authorities. Such persons have also to sign the tenders. Bankers often supply firms tendering with such requisite securities for a charge of 1 per cent. on the value of the contract involved. The Netherland Government and the municipal authorities also require some person directly representing the firm to be resident in Holland, with power to decide all questions that may arise out of the contract, so as to avoid any loss of time by correspondence in cases of trouble or disputes. The persons tendering have also, if the tender be accepted, to deposit a certain percentage (fixed in the specification) of the value of the whole contract involved.

In late years the imports from Great Britain, especially in iron goods and materials for shipbuilding, have considerably fallen off as compared with those from Germany. German manufacturers have rapidly acquired a solid reputation for their work, which was formerly looked upon with suspicion, and their products are now accepted as good without remark or query. It is only quite recently that the Dutch Admiralty and the more important shipbuilders in Holland have taken to accepting the tenders of almost any German firm for materials. A few years ago it was only the best known German firms that could tender with any chance of success. So great is the reputation of German building yards at the present time, that a certain number of freight steamers are now ordered in Germany, whereas the orders used to go to the United Kingdom. These are changes that have come about in quite recent times.

There is, undoubtedly, abundant testimony to be found in the Netherlands that British commerce labours under some disadvantages as compared with that of some foreign countries, also in other respects. Firstly, in Germany and Belgium, for instance, there is a much more methodical organisation than in the United Kingdom of certain trades, under which not only private persons but various associations connected with any given trade are to a considerable extent under the control of some central authority

for that trade. An important result is an almost universal system of "standardising," which confers a distinct advantage on, and consequently preference for, goods produced under its regulations. It would be well were this advantageous system more followed in the United Kingdom. I am told that at a recent international congress at Zurich, where the question of the "standardising" of the thread of screws was discussed, there was no representative of the large screw manufacturers of the United Kingdom.

It is certain that British trade loses many orders in the Netherlands from the fact of the metric system not having been adopted in the United Kingdom. It is said that some British firms will not even tender for orders given out in metric weights and measures.

Waterworks and gasworks

The best opportunities for foreign firms to tender in the Netherlands usually occurs for the erection of waterworks or gasworks. It will, therefore, be of interest to present a few remarks to show why British tenders for the materials required for them are not very successful.

As regards cast-iron pipes, British makers appear to be careless as to the perfection of the coating of the pipes. If this is not carefully done for water-pipes, the water becomes discoloured and gives an unpleasant taste. They are also not prompt as to time of delivery, and they do not take enough trouble to oblige Dutch customers in matters relating to the desired length of pipes and as to the form of the pipes required for special purposes. German and French firms, on the other hand, are most careful to do this; and they will also take orders for the delivery of what they call "English pipes" (*i.e.* pipes of usual English measurements). I am told that, with rare exceptions, British firms will not make pipes to foreign measurements such as are often wanted in Holland.

Another point of some importance in this trade is the question of the percentage of breakages. It has been found that the proportion of such breakages of British pipes is 5 to 10 per cent., while that of German, French, and Belgian pipes is only 3 to 5 per cent. The reason for this considerable difference is stated to be the fact that those three foreign countries protect the spigot with a band of straw and that British firms do not do so as a rule.

The gas-meter trade was, formerly, entirely in the hands of the British, but has been largely lost. British firms with only British workmen started this branch of manufacture abroad. Gradually all the British workmen were dismissed, except a few retained as foremen for the purpose of properly training the foreign workmen by whom they were replaced. There is now at Dordrecht a branch of a large French firm which not only supplies most of the meters required in the Netherlands, but also many orders for Denmark, Norway, and Sweden, which countries also, formerly, obtained them from the United Kingdom.

New Bill raising Dutch import duties

In conclusion, the new Bill, raising the Dutch import duties, must be mentioned here. It has been laid before the

States-General, and raises the rate of the general duties from about 5 to over 6 per cent. There appear to be no other very important changes effected by this law, except as regards materials for shipbuilding, *i.e.* all articles actually required for the construction of vessels. The new Bill provides that such materials shall enter duty-free, whereas, under the present law, many enter free, but others pay some duty but are subsequently granted a drawback. No actual change is thus effected in principle though the form is altered in which this privilege is granted.

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REPORT ON

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Report on Russian Railways by Mr. Henry Cooke, British Commercial Agent in Russia.

(Received at Foreign Office, February 14, 1900.)

I.—Results of the measures taken during the last 10 years for the regulation, extension and improvement of the general railway system in Russia.

General remarks.

In his budget published January 1, 1900, the Minister of Finance attributes the great success attained of late years by Russia in industry and trade, next to the policy of protection, to the measures taken during the last decade for the re-organisation, extension, and general improvement of the railway system in Russia. This railway development has been vast and rapid, though, in proportion to area and population far inferior to the railway development of France, Austria, or Belgium. But this would be leaving out of account the vast extents of polar and waste lands of the Russian Empire.

A writer in the St. Petersburg journal "Rossia," calculates that to reach the level of other European countries, Russia would have to construct 80,000 versts* more of railways, not including Siberia, and this only in proportion to population. And taking area into consideration, the total still needed would be 200,000 versts at an annual cost of 240,000,000† r., while last year for State and private lines in European Russia, 40,000,000 r. were spent in construction. The progress actually made, however, is considerable enough as the figures below show, while the last decade has practically brought the whole railway system of Russia into the hands or under the control of the State, that is, under uniform management, and besides an ever-increasing extension of lines, great improvements have been made in the unification of tariffs, and cheapening of fares, both for goods and passengers, over the whole extent of the Empire.

The railways of Russia now practically run from the White to the Black Sea on the one hand, and from the Baltic to the Yellow Sea on the other. The vast expanse of territory thus covered, great portions of which may be said to be still but partially exploited, or else entirely undeveloped, will need an

* 1 verst = ⅔ mile (about).

† Calculating cost at 60,000 r. per verst, and spreading 12,000,000,000 r. over 50 years.

increasing extension of subsidiary lines, some of which by their extent and importance, partake more of the character of main thoroughfares.

Progress made in last 10 years.

What progress has been made in this constant extension during the last 10 years the following figures show, while various projects in contemplation or under discussion cannot yet be definitely enumerated :—

LENGTH of Railway Lines.

Year.	Length.	Remarks.
	Versts.	
In 1889	28,490	Including 1,032 versts building
1899	55,286	„ 10,910 „ „

The increase during the one year 1899 was 4,085 versts, as against an increase of 2,877 versts in 1898.

Present Lines.

The various totals on January 1, 1900, were as follows :—

	Length.
	Versts.
Main lines of general importance :—	
In European Russia	38,408
In Asiatic Russia	5,222
Local lines	746
Finnish lines	2,537
	46,913
Lines now so far built as to be open for temporary traffic ..	2,339
Length of actual railway system on January 1, 1900 ..	49,252
Lines now building	9,050
„ officially authorised, but not yet begun	2,283
Grand total	60,585

Thus, we have an actual total of 49,252 versts of lines open for traffic on January 1, 1900, and a grand total of 60,585 versts under the three headings : open for traffic, building, and authorised.

Development of State ownership.

The rapid development of State ownership in railway affairs is shown by the following :—

PRIVATE Lines of General Importance.

Year.	Number.
In 1889	42
In 1899	9

STATE Lines.

Year.	Length.	Per Cent.	Remarks.
	Versts.		
In 1889	6,470	23	Including 1,343 versts in Asiatic Russia
In 1899	33,423	60	„ 9,718 „ „

The general progress has likewise been considerable. The number of passengers during 1899 was 75,710,000, or 5,000,000 more than in 1898. The goods carriage was 6,614,000 poods* or 10 per cent. over the total of 1898. The rolling stock has increased since 1894 some 50 per cent., 290,000,000 r. being assigned in this period for the purchase of engines and cars. Double lines have been laid down over 8,247 versts. General progress.

Financially a great advance has followed the State control of railways, while the general interests of the country have been better served by the Government unification of tariffs both for goods and passengers, than by the system previously in vogue, whereby each of 42 private companies worked with an independent tariff policy. The working of railways, both State and private, guaranteed by Government entailed, according to Mr. de Witte, vast losses on the Treasury up to 1889, amounting in that year to 30,500,000 r., while the debt for guarantees on private railroads reached the enormous sum of 984,000,000 r.† Financial progress.

Gradually separate railroads have been bought up, agreements have been made with a few larger companies and new lines have been built by the Government itself with the result as already shown that the whole railway system has doubled since 1889, 60 per cent. being now entirely in the hands of the State.

Since 1889, the financial loss is represented as gradually decreasing (with the exception of 1892), and from 1895 as bringing a profit, though small to the State, increasing from 1,000,000 r. odd in 1895, to 12,000,000 r. odd in 1898. Should the working of the sections of the Siberian railway, however, be included, the State profit in 1898 is reduced to 1,000,000 r.

Great changes have been made in the direction of the unification of goods tariffs, enabling one and the same class of goods to pay the same carriage over a given extent of line in all parts of Russia, while, too, the tariffs are now issued in one general official publication. Unification of tariffs.

As regards passenger traffic, the general tariff has been so ordered as to ensure a progressive diminution of the fare according to the distance travelled. The fares on Russian railways are, indeed, cheapness itself. Passenger tariffs.

Much is left to be desired in the point of speed, more especially on subsidiary lines, while even under Government control there is room for improvement still, but the general results of the measures Progress summed up.

* 1 pood = 36 lbs. (about).

† *I.e.*, "the debt of guaranteed railways to Government." Mr. de Witte's financial statement.

of the last decade, as given by the Minister of Finance, are remarkable enough: the railway system of the Empire is twice as long; the rolling stock is considerably increased; the railways now bring an annual gain instead of a loss to the Treasury; there is a uniform, stable, and accessible tariff; and passenger traffic has been greatly cheapened.

II.—Progress made in Construction in 1899.

The Great Siberian Railway.

Coming to the progress made, in fact or in project, by separate lines, the first in importance is, of course, the Great Siberian Line, which may now be said to be nearing its conclusion, though large portions of the road completed have to be reballasted and relaid, numbers of bridges have to be reconstructed, &c. This led to an additional sum of 83,000,000 r. being assigned last year for these purposes, attributed to the unforeseen increase of goods traffic on the line. Its value has been greatly enhanced since the Chinese Government leased the Quang Tung Peninsula to Russia, thus opening a more direct route for this line to the ice-free Yellow Sea. The new town and port of Dalni at the terminus of the line was begun last year and is to be a free port. About 800 versts of the Chinese railway are already laid down. Temporary traffic has been opened for 445 versts from Port Arthur to Mukden. The main line from Missovoi station viâ Chita to Srietensk was laid down by December 28, 1899, so that only the line round Lake Baikal remains to be done. From January 1, 1900, the former Western and Central Siberian Railway Administrations have been abolished, and everything connected with the construction of the whole line transferred to the newly-established Central Siberian Railway Administration.

The former divisions were:—The West Siberian, from Chiliabinsk to the Obi, 1,328 versts; Central Siberian, from the Obi to Irkutch, 1,754 versts; the Circum-Baikal, from Irkutch to Missovoi, 292 versts; the Trans-Baikal, from Missovoi to Srietensk, 1,009 versts; and the Ussurian, from Habarovsk to Vladivostock, 729 versts. The Manchurian replacing the Amur line is, from an administrative point of view, distinct from the Siberian. The pecuniary expenses of the whole line, the first part of which was laid on May 12, 1891, have been over 500,000,000 r., in addition to which about 130,000,000 r. will be required in 1900. The whole amount of the cost of construction will exceed 750,000,000 r. From a commercial point of view, irrespective of the influence it will have on the development and population of Siberia itself, the new line opens out large channels of trade, more especially in Chinese teas and silk, to the disadvantage of the at present increasing import into Russia of Ceylon and Indian teas.

Other Lines opened in 1899.

Besides the Siberian Railway, now open for traffic to Irkutch, and laid to Srietensk, the other lines opened for regular traffic in 1899 were:—

Line.	Length.
	Versts.
Samarkand-Andijan	503
Tikhoretz-Volga	505
Moscow-Briansk	335
Perm-Kotlass	817

Lines authorised in 1899. St. Petersburg to Kiev.

The lines of importance officially authorised for construction were the so-called main Southern Railway from St. Petersburg to the South viâ Kiev, to be built partly by the State (from Vitebsk to the South), and part (from St. Petersburg to Vitebsk) by the Moscow-Windau-Rybinsk Railway Company. It will shorten the distance from St. Petersburg to Kiev by 246 versts.

Tsarskoe-Selo Line. Absorption of.

The Tsarskoe-Selo Railway has been absorbed by the Moscow-Windau-Rybinsk line, and the monopolies and immunities granted to it as the first railroad built in Russia being abolished by the terms of the agreement now come to, it falls under the general laws and rules of the Moscow-Windau-Rybinsk Company. It was a curious exception to Russian railways in general, as it could not be bought up by the State, having a concession in perpetuity, as it were. This will enable the St. Petersburg-Kiev line to come right to St. Petersburg itself, with a station in the centre of the city.

Other Lines authorised in 1899.

Among other lines authorised in 1899 were the Arzamass Railway to Nijni-Novgorod (practically decided on in 1898), the joining of the Astrakan with the general railway system, and various local lines to be built by private capital, without State guarantee or assistance, one of the most important of which is the projected line from one of the stations of the Kars Railway to the Persian town of Djulfi.

Ekaterinburg-Cheliabinsk-Moscow Line.

Among projected but not yet authorised lines, was a new main line of 1,500 versts, from the Ekaterinburg-Cheliabinsk Railway to Moscow, of great commercial importance as considerably shortening the distance for the Siberian and Urals goods traffic.

Cheliabinsk-Tsaritzin Line.

For the development of the mineral industries of the Southern Urals another great line is projected, from Cheliabinsk to Tsaritzin. This would provide the Donetz basin with minerals from the Ural, and the Urals with much needed coal and naphtha fuel.

St. Petersburg-Vologda-Viatka Line.

Another important line, much talked of lately, and for which foreign capital is being apparently sought, is one from St. Petersburg to Vologda and Viatka, and thence over the now existing line to Perm. It seems the concession had been given to the Moscow-Yaroslav-Archangel Railway Company, but owing to the practical failure of this Company, which will soon be taken over by the State, the concession was withdrawn. This projected line would bring the Siberian Railway direct to the capital, open out a more direct route for Chinese teas and silk, and help to develop the great mineral industries of the Urals, besides competing to

some extent in the grain export trade with the newly-made Perm-Viatka-Kotlass-Archangel route.

Kama-Sosva Line.

On January 13/25, 1900, the first meeting took place of a Commission at St. Petersburg to discuss the question of joining the rivers Kama and Sosva, in the Urals district, by rail, at an estimated cost of 10,500,000 r., if, as proposed, built on the narrow gauge type used on the Archangel-Vologda line.

Acquirement by the State of the Moscow-Yaroslav-Archangel Line.

Among coming events is the acquirement by the State of the Moscow-Yaroslav-Archangel Railway from April 1, next, a meeting of all concerned being advertised for next month to discuss the Government's conditions to this effect.

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No. 523 Miscellaneous Series.

DIPLOMATIC AND CONSULAR REPORTS.

RUSSIA.

REPORT ON THE

COAL CRISIS IN RUSSIA AND THE MAIN SOURCES OF NATIVE SUPPLY.

Presented to both Houses of Parliament by Command of Her Majesty,
MARCH, 1900.

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1900.

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No. 523. **Miscellaneous Series.**

Report on the Coal Crisis in Russia and the Main Sources of Native Supply by Mr. H. Cooke, British Commercial Agent in Russia.

(Received at Foreign Office, March 5, 1900.)

Introductory. The continuance of the coal crisis so acutely felt in Russia generally, and particularly in the South, the abnormal rise in prices, the exhaustion of available stocks, and the dearness of kindred mineral fuels, have led to the temporary relaxation or remission of the duties on foreign coal, to stern and summary measures on the part of the authorities in Poland, fixing prices and suppressing the active influence of rings and syndicates, and to Government Commissions now sitting to examine into and report upon the whole question in all its branches. As the very life food of all industries, and of all transport by which those industries thrive and develop, the supply of available coal, encouraged and checked in turn by artificial means, in no way corresponds to the demand that the increasing industrial activity of the country makes upon it—the more so that the coal itself is but of moderate quality—for, though the output of native coal has enormously increased of late years, the import of the foreign article has likewise steadily risen, and this in spite of duties, till at the present moment the import of foreign coal has become of such urgent necessity that the duties have had to be temporarily reduced or remitted altogether.

The mining industry, itself young, has not had time to meet the demand caused by the rapid and undisputed rise and extension of the general industrial energy of the country during the last 10 years, but these industries in general are still in their youth, too, so that there seems no early prospect of the supply and demand coming more in reach of each other for some time. In the Donetz Basin alone it is estimated that this year there will be a deficit of 30,000,000 poods* in the supply, as compared with the demand, and in the Dombrovski Basin 20,000,000 poods, or altogether close on 1,000,000 tons.

A host of subsidiary causes of the present scarcity, each more or less important factors in the situation, aided by speculation, are now the subject of daily contention and discussion. Before reviewing this discussion, and the measures taken by the Government to fill up the void in the supply, it may be of interest to

* 62 poods = 1 ton.

survey in general terms the main sources of native coal in Russia, and first of all to show by a few figures the enormous rise in the industrial movement of the country, to which the present coal crisis is chiefly attributed. The Minister of Finance in his Budget Statement of January 1, 1900, tabulates the progressive growth of the general manufacturing industry of European Russia during the last 20 years, and, exclusive of mines, the totals are as follows:—

Rise of industries.

OUTPUT in Millions of Roubles of the Manufacturing Industry of European Russia.

Year.	Millions of Roubles.
1877	541
1887	802
1897	1,916

AVERAGE Annual Increase of Productiveness, in Millions of Roubles.

Years.	Millions of Roubles.
From 1878 to 1887	26·1
„ 1888 1892	41·6
„ 1893 1897	161·2

In addition to the above, taking the Mining Industries, we have the following outputs:—

	Millions of Poods.*		
	1877.	1887.	1898.
Coal	110	277	746
Naphtha	13	167	507
Pig-iron	23	36	134
Iron	16	22	30
Steel	3	14	90

* 62 poods = 1 ton.

Yield of native coal.

With this great increase in the industrial output of Russia since 1877—and particularly since 1887—we see at the same time a rapid rise in the yield of native coal, from 110,000,000 poods (1,774,193 tons) in 1877 to 746,000,000 poods (12,032,258 tons) in 1898. The output in 1899 has probably been 800,000,000 poods.

At the same time, in spite of duties, there has been a continual increase in the import of foreign coal (over European frontiers):— Increase of imported coal.

COAL Imported into Russia from Abroad.

Year.	Quantity.
	Poods.
1877	95,000,000
1887	100,000,000
1897	166,000,000
1898	196,000,000

i.e., from 1,532,258 tons in 1877 to 3,161,290 tons in 1898, while the total for 1899 will, doubtless, be considerably larger.

The two main coal producing centres are the Donetz Basin in the South, and the Dombrovski Basin in Poland. Besides these, but yielding far inferior supplies, are the Ural District, of almost illimitable possibilities, the Tula and other central provinces, the Kuznetski Basin in Siberia, the Trans-Caucasian, and other districts, which, however promising, are as yet practically undeveloped. Main coal-producing centres.

The Donetz Basin, including part of the government of Ekaterinoslav and part of the province of the Cossacks of the Don, in the South of Russia, is one of the richest in the world, with practically inexhaustible resources, calculated to produce yet some 860,250,000,000 poods (13,875,000,000 tons), or, allowing for progressive output, to last for 800 years. With 254 mines it yielded in 1897 over 355,000,000 poods of coal, in addition to 59,435,600 poods of anthracite. During 1899 the increase here alone was over 1,000,000 poods. Worked at first by numerous small companies or owners, spread over all directions, over 80 per cent. of the output now comes from 15 great mines, aided by foreign capital, mostly Belgian, which, especially of late years, has enabled work to be carried on with feverish activity, though still hindered by transport and other difficulties. The Donetz Basin has to compete with Polish coal coming to Kieff, British in the Black Sea, and with naphtha fuel in the Moscow region. The coal itself is not of first-rate quality, having a high percentage of ash and sulphur, nor does it lend itself to any good kind of coke. It hardly finds as yet any extensive market abroad. In the Donetz Basin the price for big coal in January, 1900, was 14 c. per pood, delivered at the nearest railway depôt. Prices have fluctuated considerably from 18 c. per pood, delivered in trucks in 1870, to 5¾ to 6 c. in 1896, while of late the rise has been very rapid. At Odessa, during 1899, Donetz coal varied from 14 to 21 c. per pood; Glasgow–Huli, 22 to 25 c. per pood; Cardiff, 24 to 30 c. per pood; Newcastle (till July), 25 c. per pood. Freights fluctuated between 11*s.* 6*d.* and 8*s.* per ton. At present (February, 1900) the price of English coal at Odessa varies between 28 to 30 c. per pood. The Donetz Basin.

The Dombrovski Basin in Poland is a continuation of the The Dombrovski Basin.

great Silesian coal basin, and covers an area of some 800 square versts. Inferior in most respects to the Donetz Basin, and practically producing no coke, its output has, however, considerably increased, its 20 mines yielding 230,000,000 poods in 1897, compared with 120,000,000 poods in 1880. The whole basin is worked by a few great mines, 20 in all, and the output is distributed over Poland, and in part finds a market in Russia.

The Urals District.

The Ural Mines are of extraordinary richness, practically inexhaustible in amount of possible output, but of only very moderate quality. They extend mostly along the line from Perm to Ekaterinburg. The output has risen from 10,000,000 poods in 1887, to 22,500,000 poods in 1894, and 22,000,000 in 1899, poor figures compared with the industrial needs of the district, and with the capabilities of the mines themselves. About three-quarters of the output is used up by neighbouring railways. The Urals district is immensely rich in minerals, which only need further development, further railway extension, and more abundant and more easily accessible fuel. Though the coal here is of thin inferior quality, it has its uses, and while useless for most kinds of foundry work, it can be used for boilers, locomotives, &c. With the extension of railway communications, this coal region, and its other mineral industries, will enormously develop. The chief lines urgently needed and projected are: (1) a main line to Moscow and the South, (2) the Viatka–Vologda–St. Petersburg line, (3) the Cheliabinsk–Tsaritzin line.

The Eskibastus District.

Among the remaining coal-producing districts, far inferior in present yield, however, to any of the above, but with all the possibilities of a great future, is the Eskibastus, on the west bank of the Irtish, south of Omsk, containing, it is estimated, a reserve of over 200,000,000,000 poods of coal, with copper and iron ores in the neighbourhood. The coal, though, is said to be of but moderate quality.

Other coal regions.

The Kusnetski Basin, in the government of Tomsk, Siberia, which the Siberian Railway will help to develop, the Tula and central districts of European Russia, and the Caucasian (Tkvibulski) district, all with very moderate yields, are the remaining coal regions of Russia worth mentioning.

Government measures taken.

Returning to the present coal crisis, the following are among the temporary measures taken by the Government to ward off the effects of the general scarcity:—Odessa has been authorised to import 6,000,000 poods (96,774 tons) of foreign coal for household purposes at a reduced rate of duty (1½ c. the pood, instead of 6 c.) till January 1/14, 1901, and similar reductions have been made at other ports of the Black Sea and Sea of Azov for fuel for steamers, &c. The free import of foreign coal has been authorised for the needs of the population of Warsaw, as also for all the Russian railways till September 1/14 next for railway uses only. At Warsaw wholesale dealers have been summarily ordered, under heavy penalties, not to keep prices above 1 r. 15 c. the korzec of 6 poods,* while, it is said, seventeen of the largest

* 1 pood = 36·4 lbs.

dealers have been placed under police supervision. The result, in general, has not been entirely successful, and the Government has had to send across the frontier for Silesian coal, and been unable to obtain it, owing to transport difficulties, as well as to want of surplus supplies there. A Government Commission has been sitting for some time at St. Petersburg to inquire into and report on the whole question of the coal supply and demand, more with a view to organic measures than to any permanent relaxation or remission of duties or other temporary expedients.

Causes of the coal scarcity.

While the undoubted rise and development of late years in the industrial activity of Russia, and the extension of railways and navigation have been perhaps the main causes, they are by no means the only explanation of the present scarcity and high prices of coal. The coal mining industries themselves are not fully developed enough to meet the demand, in spite of an increasing output, and in spite of a protective tariff, while insufficient railway accommodation, difficulties of delivery, and generally defective transport arrangements, play an important part in the situation. Another important consideration is the dearness of naphtha and kindred fuels preceding the rise in coal prices. The activity of syndicates and rings, by limiting production and bringing up prices, and the universal speculation and gambling attending of late the coal and other industries of Russia are equally important factors, against which the Government has taken, as shown above, summary administrative measures—at least as regards coal. In the Dombrovski Basin, the second largest coal producing district of Russia, the mines at work are distributed among 15 or 16 owners, five of whom, it is said, produce 86 per cent. of the whole annual yield, a condition which could easily lend itself to irregularities, while wholesale dealers on their part, in a trade which in every country seems peculiarly to lend itself to abuses, could hardly fail to take advantage of the scarcity or to promote it, so as, by limiting the stocks available, to get full command of the market, and work prices upwards to the desired point. By the end of December dealers at Warsaw had raised prices to 225 r. the load of 660 poods, while it cost them 100 r. The Government now forces them to sell at prices not higher than 115 r. the load. The action of the railway companies, forcing the collieries to provide at original or only slightly increased prices, under previous agreements, irrespective of scarcity, has had a considerable bearing on the crisis. Other subsidiary causes, said more or less to have influenced the situation, have been the want of hands, rise in wages, decrease of hours, and superabundance of national and religious holidays—to an extent, however, which has been much disputed. Others see nothing specially local in the state of the market, but attribute it to the more or less corresponding scarcity elsewhere, and other external causes, such as the war in South Africa. The non-use of naphtha as fuel for warming purposes, even in the Baku and other region where it is comparatively cheap, is also brought forward, tradition and fear of

dangerous consequences, besides a somewhat complicated apparatus, rendering hard fuel more popular to the ordinary mind.

Remedies. As regards remedies, the Government has already, with more or less success, by temporary relaxations or remissions of duties on foreign coal, and by stern administrative measures against the action of syndicates and speculation in general, provided for the present; but these are but temporary expedients not touching the heart of the matter, and it is universally recognised that organic changes and improvements all round, at the mines and in the means of transport, have become urgently necessary. There is an inexhaustible supply of coal in Russia as yet undeveloped. True, it is in general of somewhat inferior quality. While one or two papers boldly propose the permanent abolition of duties on foreign coal and coke, protesting that by 15 years of protection the authorities have systematically ignored the interests of consumers, and helped thereby to devastate the forest riches of Russia, the Government itself, by the mouth of the President of the Commission now investigating the whole subject, emphatically declared at the first meeting that the question of the remission of duties could not enter into the programme of discussion at all. Others propose, as the only remedy, that the State itself, as a great railway owner, should have its own mines and work the railways from them.*

* The sources from which this report has been drawn up have been the official and trade publications and periodicals, the daily Press, and the works of Monsieur Maurice Verstraete.

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DIPLOMATIC AND CONSULAR REPORTS.

RUSSIA.

REPORT ON THE

WATERWAY BETWEEN THE BALTIC AND BLACK SEA.

Presented to both Houses of Parliament by Command of Her Majesty,
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No. 529. **Miscellaneous Series.**

Report on the Waterway between the Baltic and Black Sea

By Mr. CONSUL WOODHOUSE.

(Received at Foreign Office, June 6, 1900.)

Some time ago a number of articles appeared in different newspapers and journals on the subject of inland navigation in Russia, and, with a view to bringing into greater service the principal waterways of the Empire, a variety of suggestions were brought forward, amongst which was the gigantic idea of converting the Duna and Dnieper into a deep-water canal from the Baltic to the Black Sea.

As this latter project has attracted considerable attention, I have ventured to gather a few facts concerning the character of the rivers here mentioned, the measures that have been taken to improve their navigation, and the possibility of carrying into effect a scheme of such magnitude as that referred to.

More than a century ago the Duna was connected by a series of canals with the Berezina, one of the tributaries of the Dnieper, and produce from the central provinces of Russia, found its way to Riga by this route. But, with the introduction of railways, water transport gradually died out, and everything, with the exception of timber, is now carried by rail.

From time to time efforts have been made to induce the Ministry of Ways and Communications to improve the condition of this waterway, and to render it more available for the transport of timber, if for nothing else, but beyond granting small sums of money for the purpose of putting the locks into repair, nothing has been done.

As far back as the early forties, the urgency for improving the navigation of the rivers and canals was strongly represented to the Imperial Government, and a few years latter attempts were made to obtain concessions for private companies, who were prepared to undertake the much-needed work, the Government, apparently, being disinclined to do so, but for some reason or other all negotiations fell through, notwithstanding the fact that at that period Riga depended entirely upon the rivers for its supplies from the interior. In 1857 a company, with a capital of 500,000 r., proposed to make the Duna navigable for small steamers, provided the Government granted them a concession for 20 years, but this scheme followed the others.

In 1875 and 1876 a committee, composed of the leading members of the Riga Exchange Committee, river inspectors, engineers merchants, and others, went into the question in detail, a survey of the course of the Duna and Berezina connections having been made for the purpose, and every argument was adduced in support of a petition to the Imperial Government for assistance in removing some of the principal obstructions in the rivers, but all to no purpose. In 1884 the matter was again brought up, and further surveys having been made, the Ministry of Ways and Communications was once more approached on the subject, and at repeated intervals since the Riga Exchange Committee, conjointly with other Exchange committees in the interior, has endeavoured to prevail upon the Government to take steps towards effecting some improvements in the rivers, and a few years ago the advantages of an efficient waterway between the Baltic and the Black Sea were pointed out. It was then shown that, with a minimum depth of water in the rivers and canals of from 4 to 5 feet, not only would produce from the interior be more easily obtained, but that it would be even possible for the industries in the north to procure coal, iron, and other articles from the southern provinces. This it was that suggested the idea of making a canal for vessels of deep draught, even for ships of war, and so practicable was the scheme made to appear that the foreign newspapers lost no time in spreading the report that the work had been decided upon, they even went so far as to give the estimated cost of the canal, viz., 200,000,000 r. (roughly, 20,000,000*l.*), to state that it would be lighted from end to end by electricity, &c., &c. Now, whether any such scheme had at that time been seriously contemplated, or any estimate of the cost worked out, I am not prepared to say, but not many weeks ago a gentleman paid a visit to Riga and laid before the Exchange Committee a project which he stated had been prepared by a syndicate of British capitalists, whom he represented. This project provided for a depth of 28 feet from sea to sea, and suggested the possibility of making inland ports for foreign vessels in the very heart of Russia, &c., at an estimated cost of 600,000,000 fr. (24,000,000*l.*), which amount would be raised by the syndicate on certain conditions, into the particulars of which it is not here necessary to go. When the Exchange Committee were requested to support the scheme they positively refused to have anything to do with it in its present form, but stated that if a depth of 10 or 11 feet could be guaranteed for the same amount, they might be inclined to give the matter consideration.

Now, as to the possibility of making a canal of a depth of 28 feet from the Baltic to the Black Sea a distance of 1,410 miles, anyone only slightly acquainted with the character of the Duna and the Dnieper might be inclined to believe that it might be done, and possibly it might, but at what cost? and how about its maintenance afterwards? Let us go over the whole course, taking first the Duna, then the Berizina connections and the Dnieper.

From Riga along the Duna to Ulla is a distance of 311 miles.

This part of the river is full of sandbanks and rocky shallows, with heavy falls of water here and there. From the surveys made by the engineer of the Riga Exchange Committee it appears that from Witebsk to Riga there is a fall of 58·93 fathoms (353·58 feet), of which the following are the details:—

	Distance.	Fall.
	Versts.	Fathoms.
From Witebsk to Ulla	92	5·69
„ Ulla to 4 versts above Disna	86	3·54
„ 4 versts above Disna to 3 versts below ..	7	1·55
„ 3 versts below Disna to Pereres	124	6·64
„ Pereres to Krivez	2	0·70
„ Krivez to Menkenhof	81	2·16
„ Menkenhof to Jacobstadt	23	2·94
„ Jacobstadt to Selkenhof	5	2·96
„ Selkenhof to Wener	8	0·38
„ Wener to Sedelneek-Krug	18	11·30
„ Sedelneek-Krug to Krasnije Stanki.. ..	64	12·56
„ Krasnije Stanki to Keggun	3	1·99
„ Keggun to Fischwehr Gladki	26½	4·17
„ Fischwehr Gladki to Maruschka	6½	2·00
„ Maruschka to Riga	12	0·34
Total	558	58·93

NOTE.—The distances are given in versts and the falls in fathoms. A verst is practically two-thirds of an English mile.

The depth of the Duna between Witebsk and Riga varies, but nowhere does it exceed 3 fathoms, and that at three points only, viz., between Druja and Kreslawl, near Menkenhof and at Tichaja Ruba, the average being less than a fathom. On the sandbanks and rapids, of which there are 66, covering a total length of 93 versts, the depths, taken from the official surveys, are given below:—

—	Distance from Witebsk.	Length of Sandbank or Rapid.	Name or Position of Sandbank or Rapid.	Depth.
	Versts.	Versts.		Fathoms.
No. 1	10—11	1	Sandbank Shest below Poroshki Babki Rapid	0·32
„ 2	12—13	1	Sandbank near the mouth of the Gorodischtsche	0·21
„ 3	24—25	1	Below Dsjagilewo	0·39
„ 4	53—55	2	Wjaschtschizki Sandbank ..	0·34
„ 5	58—59	1	Near Chrapowischtsche ..	0·34
„ 6	63—64	1	„ Beschenkowitschi.. ..	0·34
„ 7	73—74	1	Below Bui	0·24
„ 8	74—75	1	Werba Sandbank	0·33
„ 9	90—94	4	Sandbank near Ulla	0·24
„ 10	97—100	3	Ilowka Sandbank	0·37
„ 11	101—102	1	Golodni Sandbank	0·30
„ 12	125—126	1	Below the mouth of the Sosniza	0·34
„ 13	130—131	1	Near Pirutino	0·29
„ 14	133—134	1	„ Rasimirowka	0·29
„ 15	142—143	1	„ Polotsk	0·32
„ 16	148—149	1	Ochotniza Sandbank	0·39
„ 17	168—170	2	Below the mouth of the Ilowo..	0·32
„ 18	181—182	1	Near Disna	0·18
„ 19	201—202	1	„ Kii Island..	0·33
„ 20	202—203	1	„ Chorober Island	0·33
„ 21	238—239	1	Below the mouth of the Wjatka	0·30
„ 22	244—245	1	„ Bernard Island	0·32
„ 23	310—311	1	Krivez Rapid	0·39
„ 24	327—330	3	Sandbank near Dwinsk (Dünaburg)	0·21
„ 25	342—344	2	Below Wjasowka Krug.. ..	0·15
„ 26	345—348	3	„ the mouth of the Lixna..	0·24
„ 27	380—381	1	„ Simon Island	0·36
„ 28	397—398	1	Dubki Rapid	0·29
„ 29	400—403	3	Klaukau Rapid	0·34
„ 30	410—411	1	Glinowez Rapid..	0·26
„ 31	417—418	1	Sedlowatik Rapid	0·35
„ 32	418—419	1	Kosaja Rapid	0·25
„ 33	419—420	1	Petschina Rapid	0·37
„ 34	420—421	1	Katucha Bank	0·37
„ 35	431—432	1	Popuski Rapid	0·21
„ 36	432—433	1	Tichaja Ruba Rapid	0·21
„ 37	435—437	2	Brodesh Rapid	0·07
„ 38	438—439	1	Pokrowaja Rapid	0·37
„ 39	440—441	1	Pod Ulan Rapid	0·20
„ 40	443—445	2	Sibutschije Plesy Rapid ..	0·22
„ 41	446—447	1	Husar Rapid	0·20
„ 42	450—451	1	Tschertowa Boroda Rapid ..	0·35
„ 43	453—454	1	Melniza Rapid	0·32
„ 44	455—456	1	Pereseja Bar	0·32
„ 45	458—460	2	Pereseja Rapid	0·27
„ 46	461—463	2	Below Pereseja Rapid	0·21
„ 47	475—476	1	Schelesniza Rapid	0·32
„ 48	477—478	1	Tschubes Rapid..	0·34
„ 49	483—487	4	Near Friedrichstadt	0·27
„ 50	489—490	1	Palka Rapid	0·28

—	Distance from Witebsk.	Length of Sandbank or Rapid.	Name or Position of Sandbank or Rapid.	Depth.
	Versts.	Versts.		Fathoms.
No. 51	496—497	1	Koshemjalskaja Ruba Rapid ..	0·27
„ 52	506—507	1	Near Ringmundshof Holm ..	0·35
„ 53	511—512	1	Krasnije Stanki Rapid	0·23
„ 54	512—514	2	Keggum Rapid	0·07
„ 55	516—518	2	Banja Rapid	0·21
„ 56	518—519	1	Swjatucha Rapid	0·36
„ 57	520—521	1	Near Pröbstingshof	0·36
„ 58	523—524	1	Slankain Rapid	0·36
„ 59	527—528	1	Near first Uexküll Island ..	0·28
„ 60	530—531	1	„ second Uexküll Island ..	0·34
„ 61	539—540	1	Gladki Rapid	0·33
„ 62	540—542	2	Near Martinsholm	0·37
„ 63	542—543	1	„ the upper end of Nopenholm	0·15
„ 64	543—546	3	Bolwanzi Rapid	0·16
„ 65	546—547	1	Near Fischwehr Gladki.. ..	0·37
„ 66	547—549	2	Tscherep Rapid	0·26

Passing into the Ulla, which rises in Lake Lepel, stony shallows are met with at Martinowo, Frolkowiz, and Tschaschniki, and near the last-named place there is a short canal, called the Tschaschniki Canal, which cuts off a bend of the river. Continuing along the Ulla we reach Lake Lepel. From Lepel the course runs along the Essa, through the Wereb Canal to Lake Bereschta, then on by another canal connecting this lake with Lake Plawio, through Lake Manetz, down the River Sergutsch and the Sergutsch Canal to the Berezina, this river being entered at a point near the village of Salassy. From Ulla to Salassy the distance is about 80 miles, and the highest water level is in Lakes Plawio and Manetz. From Plawio to Tschaschniki there is a fall of 124 feet, but from Plawio to Salassy the fall is not more than 21 feet, the Berezina, at the point of entrance, being 103 feet higher than the Ulla at Tschaschniki. Between Tschaschniki and Lake Plawio there are nine locks and between Plawio and Salassy three. For ordinary service, *i.e.*, for timber rafts and light craft, there is always plenty of water, even in the driest seasons, but it is questionable whether the supply from the lakes and streams would be sufficient for the projected service.

The Berezina which rises some 40 or 50 miles above Salassy, passes the towns of Borisow and Bobruisk, and falls into the Dnieper at Gorval. It is shallow throughout, and only serviceable for small vessels. Between Borisow and Gorval there is

communication by passenger steamers drawing about 2½ feet of water.

Between Gorval and Ekaterinoslav the Dnieper has no serious obstructions beyond the shoals and sandbanks, but as these are constantly changing, navigation in many places is at times somewhat difficult. After the subsidence of the spring floods fresh channels have always to be marked out, and even then the grounding of the light river boats is of frequent occurrence. Between Gorval and Kiew the navigable depth in summer is about 3 feet, and between Kiew and Krementschug 3 feet 6 inches. Below Krementschug the river deepens and continues without a break as far as Ekaterinoslav.

A little below Ekaterinoslav are the cataracts of the Dnieper, and with reference to these Sir Charles Hartley made some remarks in a paper on "Inland Navigations in Europe," published 15 years ago, which I cannot do better than quote. Sir Charles said:—

"This great obstruction to the navigation, which I inspected in 1873, is caused by a granite outshoot of the Carpathians, and consists of nine distinct rapids in a length of 47 miles, the total fall being 107 feet. The most formidable of these obstacles are the Koidatsky Nenasitelsky—the insatiable—and Volingsky Rapids, their average length being only 7,700 feet, with a total fall of 34 feet. Several abortive attempts were made between 1788 and 1833 to improve the navigation by means of side-cuttings near the shore line, but no improvement of any kind was effected till 1853, when, after 10 years' work, a series of canals were formed in the bed of the river, and protected at the sides by parallel walls of rock-work, furnished with splayed guiding-walls facing up-stream, with the view of allowing vessels of small draught to make use of them at certain seasons of the year, when the rapids would otherwise be impassable. In practice, however, their only use has been to allow of the occasional passage of undecked flat-bottomed barges carrying from 5 to 7 tons, and drawing 18 inches at extreme low water. At all other seasons the confined artificial channels, which have a width of about 140 feet, are regarded as mere traps at each one of the rapids, and are therefore, always carefully avoided by descending vessels. No cargo-boats ever ascend the rapids, and the whole trade over them is consequently limited to rafts of timber, and to raw and also manufactured produce floated down-stream from long distances in lightly constructed barges, which are broken up and the wood used for building purposes on their arrival at Kherson, a port on the right bank at the head of the Delta, 216 miles below Alexandrovsk."

From Alexandrovsk, a town at the foot of the cataracts, as far as Nicopol, a distance of about 45 miles, the river is shallow and dangerous to navigation, on account of the rocky nature of its bed. This part of the river is navigable for vessels drawing about 4 feet of water—in dry seasons somewhat less. Below Nicopol the depth gradually increases, but is broken by rocky banks at one

or two points before reaching Kachovka. From Kachovka to Kherson, and below Kherson to the mouth of the river, there is plenty of water even for ships of deep draught. At the mouth of the river and for some distance along the estuary the water is shallow, then it deepens again as far as the Otchakov bar, on which there is 20 feet, but nowhere in the estuary eastward of the bar, with the exception of a slight depression off Stanislav spit, is there a greater depth than 23 feet. Westward of Otchakov bar the channel to the Black Sea is deep enough for vessels of any size.

The following are the distances from point to point:—

	Distance (about).
	Miles.
Riga to Ulla	311
Ulla to Salassy	80
Salassy to Gorval	178
Gorval to Kiew	200
Kiew to Krementschug	212
Krementschug to Ekaterinoslav	103
Ekaterinoslav to Alexandrovsk	60
Alexandrovsk to Kherson	216
Kherson to Otchakov	50
Total	1,410

Another route, or rather a slight deviation from the one described above, which has lately been surveyed with the idea of connecting the Duna with the Dnieper by the Lutscheza, perhaps presents fewer difficulties at the point of connection than by the Berezina, but the main obstacles remain the same. The first part of this route from Riga to Witebsk has been fully described. At Witebsk, about 61 miles above Ulla, the Lutscheza falls into the Duna. This river is small and shallow, but it is believed that it might be rendered navigable without much difficulty. About 46 miles from its mouth a canal 12 miles long would have to be cut to the river Orschiza, and then on by the bed of the Orschiza to the Dnieper, a further stretch of 18 miles or thereabouts. The total length of this connection would be a little over 78 miles and it would have to be locked at two or three places. From the mouth of the Orschiza, 9 miles above the town of Orscha, down as far as Gorval, the character of the Dnieper is pretty nearly the same as between Gorval and Kiew. The remainder of the course to the Black Sea has been given.

Distances by this route:—

	Distance (about).
	Miles.
Riga to Witebsk..	372
Witebsk to the mouth of the Orschiza ..	78
Mouth of the Orschiza to Gorval	207
Gorval to Otchakov	841
Total	1,498

From the foregoing it will be seen what physical difficulties would have to be overcome in driving a canal 28 feet in depth from the Baltic to the Black Sea. But this is not all. Supposing the canal to be cut, what is to be done to prevent its silting up? The winters in Russia are long—another consideration—and every year there are heavy accumulations of snow; consequently on the approach of spring large districts are inundated, the result of which is that great quantities of sand and mud are carried down and deposited in the beds of the rivers. As an instance of this, after the breaking up of this last winter, the Duna at Witebsk rose 25½ feet above its normal level, and the bar at the mouth of the river silted up from 22 feet to 13 feet 6 inches in the course of a few days.

But if, after all, it should be found practicable to make such a canal and its silting-up provided against, would the revenue cover the interest on the capital and the annual expenditure for maintenance? This is a question of roubles and copecs. It is not known what the cost of construction would be. A talk of 200,000,000 r. or 600,000,000 fr. is, in my opinion, wide of the mark, and any proposal to undertake the work for either of these sums would need careful consideration.

But leaving aside the question of a deep-water canal, a through waterway for vessels drawing 4 or 5 feet, or perhaps a little more, the cost of making, which would be comparatively small, would undoubtedly be of great service to a large section of the country. As it is, the Duna and the Dnieper are practically useless, except for local carrying purposes. It is true that the upper reaches of the Dnieper have been partially dredged, but the Duna and the Berezina connections have been entirely neglected. Nothing either has been done with regard to the cataracts of the Dnieper. Some months ago a British company endeavoured to secure a concession for locking the cataracts with a view to rendering the channel navigable. They proposed to do the work on the condition that the Imperial Government guaranteed them a dividend of 3 per cent. The Crown was to take all the river dues, and the profits of the company were to be derived from the power of the falls, said to be no less than 300,000 horse-power, but the scheme fell through.

On the lower Dnieper dredging operations have been going on for some time but with quite another object. The channel on the bar at the mouth of the river has been deepened to 16 feet—it

was previously not more than 10 feet deep—and it is intended to dredge down to 22 feet, in order to open out the Dnieper to the sea and make Kherson a port for ocean-going steamers. For this work the sums assigned total up to 1,650,000 r. for the past four years, and 427,000 r. have been granted for 1900.

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No. 533 Miscellaneous Series.

DIPLOMATIC AND CONSULAR REPORTS.

RUSSIA.

REPORT ON THE

TRANS-SIBERIAN RAILWAY.

Presented to both Houses of Parliament by Command of Her Majesty,
JULY, 1900.

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No. 533. Miscellaneous Series.

Report on the Trans-Siberian Railway by Mr. Cooke, British Commercial Agent in Russia.

(Received at Foreign Office, June 18, 1900.)

Introductory.

No practical interest would be served by endeavouring to retrace the meagre records of Siberia from the times of Yermak, the national hero, to the epoch ushered in by the ambitious railway project, whose approaching realisation is now attracting world-wide attention. The moral and material progress of the country during this dreary interval was to all intents and purposes absolutely nil, while, coming down to our own days, the only associations connected with the name but tended to its further isolation. It is this very want of a past, however, which is the measure of its present importance, as a virtually virgin tract of well-nigh immeasurable dimensions, whose natural riches are now for the first time being made accessible to the growing populations of Russia proper, and to the industries and enterprise of the outer world. The recent determination of the Russian Government to reconsider the whole exile system as applied to Siberia, with a view to its ultimate abolition, will in time remove the stigma of degradation that has pressed so heavily hitherto on the commercial and industrial development of the country generally. Freer communications, already diffusing hundreds of thousands of immigrants yearly over the length and breadth of the land, will help to dispel the general ignorance with regard to this vast and little-understood region, its diversities of climate, and all its varied and practically unworked resources. The increasing rush of immigration, which the railway has already inaugurated, must needs introduce new life, new institutions, and new necessities, and as Siberia herself cannot as yet work her own untold natural riches, nor Russia alone assist her in any appreciable degree, it is mainly from abroad that modern mechanical processes must be supplied, and mainly from abroad, too, that capital and enterprise, with all the active accompaniments of industrial civilisation, will be sought.

It is to the railway, even in its present unfinished condition, that this change of prospects in the welfare of Siberia is due, and it is the railway which, ceasing to be merely the cause, must continue as the great ever-expanding instrument of the internal development of the country itself, and of her commercial inter-

course with the world in general, besides serving as a vast medium of communications between the Eastern and Western nations on each side. It is, indeed, not too much to say that the completion of this gigantic thoroughfare, which is to bring Paris into direct overland communication with Vladivostock, will, commercially and otherwise, be one of the greatest events of the opening years of the new century.

Though by no means easy to lose sight of the pre-eminently political and strategical bearings of the whole scheme, a rough attempt will be made here to review it from a commercial point of view alone, both as regards Siberia itself and the influence of the new route on international intercourse generally. Nor in this sense alone, whether designedly or accidentally, and especially on looking ahead to the expansion of the railroad on both sides by means of branch-feeders, with a future double central track, and all the improvements and reorganisation of traffic that actual experience must suggest, can its commercial and internal advantages be otherwise than notable. For, besides bringing Russia within reach of the teeming populations and rich resources of her Far Eastern frontiers, which the world is undoubtedly prone to believe was the main object of the whole undertaking—apart, too, from the through traffic in both directions—it is no Sahara Desert that the line traverses midway.

Siberia. Broadly speaking, under the name of Siberia is usually included all the territories of Russia beyond the Urals, all Asiatic Russia, except the Trans-Caucasus, Caspian, and Turkestan regions, or, in other words, the expanse of territory stretching from the Polar Ocean to the Chinese frontiers, and from the Urals to the Pacific.

It embraces two vast governments of the Obi Basin, Tobolsk and Tomsk, known as Western Siberia; two belonging to the basin of the Yenisei, those of Yeneseisk and Irkutch, as well as the Yakutch territory, washed by the Lena, Yana, Indigirka, and Kolim rivers, all forming the so-called Eastern Siberia, and from an administrative point of view, the Governor-Generalship of Irkutch; two "oblasts," or regions, those of Akmolinsk and Semipalatinsk, the north-western parts of the Central Asian Steppes, and, administratively, the Governor-Generalship of the Steppes; and lastly the Amur–Primorskaia borderland, or Governor-Generalship of the Amur, consisting of the extreme north-eastern frontier zones along the Behring Sea, Sea of Okhots, and Kamtchatka, with the island of Sakhalin.

Area of Siberia. The total area covered within the boundaries enumerated is over 12,000,000 square versts, or, in other words, an expanse of territory one and a half times the size of Europe.

Population. The population, according to the census of January, 1897, was 7,091,244, as against 3,430,930 in 1858. The increasing number of immigrants has probably now brought the total population up to over 8,000,000. The densest parts, comparatively speaking, are the governments of Tomsk and Tobolsk. The average distribution is 0·58 per square verst. Males predominate

as regards numbers, the proportion of women varying according to the province from 37 to 102 per 100 men, coming to a total average of 93 per 100 of the stronger sex. Among the larger towns, two of which exceed 50,000 inhabitants, are Tomsk and Irkutch, with 52,430 and 51,434 respectively, followed by Omsk with over 40,000, Barnoul, Blagoviestchensk, and Tiumen with 30,000 each, Krasnoyarsk with 26,600, and Petropavlovsk and Tobolsk with about 20,000 each. The inhabitants of the towns form but 8 per cent. of the general population, a small proportion, speaking little for the industrial activity of Siberia generally.

Siberia in general.

Dealing with a vast expanse of territory exceeding in area the whole of Europe, and some 40 times the size of the British Isles, it would require a volume, equal in bulk as well as interest to the lately-published official handbook to the Siberian Railway, to give any adequate idea of the diversities of the country and climate, its peoples and customs, its old and new land routes and immeasurable waterways, or, in general, to describe the resources and possibilities included in the term Siberia. What it is, and at the same time what it might be, even when duly considering its extensive Polar wastes, is seen from the fact that the total population of this Greater Russia has but lately begun to exceed that of London. It will be to Russia's increasing millions what British dependencies have been to the United Kingdom. The railroad now approaching completion will give the desired impetus to colonisation and development, and by making the whole country a vast transit route between east and west open it out to the whole world.

Railway projects.

For over 30 years the question of constructing this line had been a theme of interminable discussions and reports. Finally, the following unmistakeably emphatic note of its Imperial founder, the Emperor Alexander III, appended to a report on the general condition of Siberia, moved the whole project definitely forward as a thing that was to be and at once: "How many of these reports of the Governors-General of Siberia have I perused, and with sorrow and shame must own that the Government has hitherto hardly done anything to satisfy the demands of this rich but neglected region! It is time, indeed time!" A further equally emphatic and still briefer note, added to a report of the Minister of Ways with regard to the projected Ussuri route, is to form the appropriate inscription to the monument to be erected at Vladivostock, the terminus of his great work, to his late Imperial Majesty: "The construction of this railway must be begun forthwith."

The first stone laid.

The first stone was laid at Vladivostock on May 19, 1891, by the then Grand Duke Nicholas, now the reigning Emperor.

Subsequent events.

The events of striking importance that followed were:—

August 26 and December 4, 1896.—The Russo-Chinese Bank authorised to construct and work the Chinese Eastern Railway.

March 15, 1898.—Lease of Port Arthur and Talienwan to Russia, with the right to connect these ports with the main line.

March 17, 1898.—Talienwan to be a free port.

May 6, 1899.—Imperial Order foreshadowing the reconsideration of the policy of sending exiles to Siberia.*

The Siberian Railway Committee.

A Siberian railway committee was formed under the presidency of the then Grand Duke Nicholas Alexandrovich, whose duties were (1) to construct the main and necessary feeding lines; (2) to take measures for the general commercial and industrial development of Siberia; and (3) to direct and control the colonisation movement.

Direction of the route.

Taking the direction of the route, not as it was to have been, but as it is or will be, we see that with Moscow as the European centre point, and the Moscow–Samara–Cheliabinsk line as its principal feeder, the main road runs from Cheliabinsk, whence it really starts eastward, direct through mid-Siberia to Lake Baikal, and thence, viâ Chita, to Stretensk on the Shilka, a navigable tributary of the Amur.

The Manchurian route.

At present, the projected course of the railway viâ the Amur has been arrested, owing on the one hand to various technical difficulties, and on the other to the facilities, political and otherwise, conceded by China, and another direction, in the nature of a short cut through Manchuria, has been entered upon. The well-known agreement with China, and the formation of the Chinese Eastern Railway Company, rendering the original continuation of the line from Stretensk less urgent, it has been resolved, instead, to construct two direct lines to the Chinese frontiers, from Kaidalovo on the main Siberian route on the one side, and from the Ussuri or Habarovsk–Vladivostock line on the other. These two lines, traversing Manchuria from opposite directions, are to meet at Khulan-Chan (Khaorbin), thence running southwards to Dalni and Port Arthur. Thus, we see the three lines, the main Siberian road, which, except for the brief stoppage at Lake Baikal, will run in a practically straight and uninterrupted course from Cheliabinsk to Vladivostock; the Ussuri line running northward through Russian territory from Vladivostock to Habarovsk; and the branch section from Khulan-Chan (Khaorbin), on the main line, striking out southward through Eastern China to Dalni and Port Arthur.

Progress made.

As far as Russia is concerned, it may be said that her portion of the work is practically ready, though much re-laying and reconstruction may at any time be necessary. The main line is open for regular traffic from Cheliabinsk to Lake Baikal, and for provisional traffic to Stretensk. According to the latest telegrams, regular traffic from Lake Baikal to Stretensk is to be commenced on July 1/14, 1900. Thus, there is now a direct run (excepting only the lake crossing of 60 versts (about 40 miles), from Moscow, viâ Samara, Cheliabinsk, Omsk, and Irkutch, to Kaidalovo (252 versts (168 miles) this side of Stretensk), whence the rail will turn off to Nagodan on the Chinese frontier. This latter

* With reference to this question the State Council is reported to have just decided, by a majority of votes, to introduce at once the necessary changes, as the Central Prisons Administration has declared that the gaol accommodation is sufficient. The number of exiles to Siberia from 1823 to 1898 is given as 908,266, mostly to Eastern Siberia.

stretch, a distance of 325 versts (216 miles), will complete the work as regards Russia.* The Ussuri line, from Habarovsk to Vladivostock, has been open for traffic since 1897. The Circum-Baikal connecting line, round the southern bend of the lake, a distance of 292 versts (195 miles), remains to be laid, the lake being crossed at present by steam ferries or ice-breakers. A new ice-breaker, built in England, is now on its way in pieces to Lake Baikal. It is the Manchurian sections, therefore, that at present retard the consummation of the complete overland track to Vladivostock. Nor, from recent accounts, does it seem likely that the Chinese engaged in the work will bring it to a conclusion much before 1902, if then. Even now, however, goods can make their way through Siberia to Stretensk by rail, and thence down the Shilka and the Amur to Habarovsk, or further on, by the Ussuri line, to Vladivostock.

As regards the railroad from Port Arthur northward, the latest news brings it to Telin, north of Mukden, trains with workmen running this distance, some 500 versts. The Chinese Eastern Railway Company promise to join Port Arthur to Vladivostock by October next, it is said, but, even on the route already temporarily in rough working order, dwellings, stations and permanent bridges have yet to be built.

Returning to the Siberian line proper, it was so rushed on that vast portions of it have had to be entirely re-ballasted and re-laid. This re-construction, together with the complete overhauling or rebuilding of bridges, &c., entailed an additional expense of 83,000,000 r., assigned for the purpose last year.

Thus, there is now direct communication between Moscow and Stretensk by rail, a distance of 6,471 versts (4,214 miles), and from Stretensk to Habarovsk and Nikolaieff by the Shilka and Amur rivers, a further distance to Habarovsk of about 2,000 versts (1,332 miles), and to Nikolaieff, the mouth of the Amur, of over 3,000 versts (2,000 miles). The Amur is navigable from May to September, but for shallow-draft vessels only.

Feeding lines and connecting waterways.

Various important European feeding lines have been constructed, and others, partaking more of the character of huge main thoroughfares are projected. Cheliabinsk, the starting-point eastwards, is connected with Moscow by the Zlatoust–Samara–Moscow Railway, which, touching the Volga at Samara, crosses it at Sisran. Two northern branches, the Tiumen–Perm, and Kotlass–Viatka–Perm, meeting at Ekaterinburg, the capital of the rich Ural mineral district, run into the main Siberian line at Cheliabinsk. From this latter point, too, a new route has long been projected direct to St. Petersburg, viâ Viatka and Vologda. So that, while the future will connect Cheliabinsk, and with it the main Siberian railway, in a direct line with the Baltic, not as now viâ Moscow, the present joins it on the one side with that city, the business-centre of Russia, and on the other to the new northern through route, which, viâ Kotlass and Archangel, is this year to bring the cereals of Siberia to London. In the course of time, too, feeders from the great agricultural, coal, and other mineral centres of

* For sketch, distances, &c., see end.

Siberia itself will run into the main route, while, already we hear unconfirmed rumours of more direct rail communications between the Trans-Baikal section and the heart of China. Nor must we lose sight of the magnificent waterways traversing the main line in all directions, such as the Obi and Yenisei, with their great tributaries, among them the Tobol and the Irtish, cutting the railroad at Kourgan and Omsk, and meeting at Tobolsk, each prominent future centres of commercial traffic. Omitting the Lena, which flows into the inaccessible Polar Ocean, we come to the Shilka and the Amur, now acting as continuous through-traffic highways from the existing line to the Pacific. Nor are the extreme Eastern rivers the only navigable waterways to the ocean. Between the Obi and Yenisei and the Thames, viâ the somewhat precarious Kara Séa route, an interchange of British and Siberian goods has on and off been maintained for some 20 years now. British shipping enterprise alone has hitherto carried this through.

Last year, however, for the first time, witnessed a complete failure, one steamer being ice-jammed in the Kara Sea, and the rest having to return home with the objects of the voyage unaccomplished, and the whole future of the route considerably jeopardised. As, in any case, with or without the projected ice-breaking convoys, this sea route can never be considered absolutely reliable, and can be utilised only for some six weeks of the year, it is hardly likely, under existing conditions, more or less unchanging, to attract the traffic expected by the Perm–Kotlass–Archangel route, now commencing operations, and of promising importance as an easily accessible outlet to the Western markets for the grains of Siberia.

A project, however, has been started, not for the first time, to dispense altogether with the uncertain Kara Sea, by running a rail from Ovdorsk on the Obi to Bielkovski Bay, this side of the Yugorski Shar, a distance of 370 versts (247 miles).*

* An expedition, under Engineer Gette, has been organised to survey the proposed route for this railroad. The cost is put at 40,000 r. the verst. The partisans of this project state that grain would thus reach London from Barnoul twice as quick as viâ Kotlass-Archangel. Taking the opening of the Obi, near the Irtish, as about June 2 (N.S.), grain, say the first lot, a million poods, despatched from Barnoul would reach Ovdorsk by river about June 18, and in five days would arrive by rail at Bielkovski Bay ready for shipment. Thence 15 to 18 days would bring it to London, *i.e.*, about July 8 to 12. This could go on through June, July and August. The difference in freight is reckoned up thus: Barnoul to London by Kotlass route, 52 c. the pood; by the Ovdorsk route, 37 c. Such is the view put forth. The freight calculation is thus made up:

Kotlass Route.	Freight.	Ovdorsk Route.	Freight.
	Copecks.		Copecks.
Barnoul to Tiumen	11	Barnoul to Ovdorsk ..	10
Tiumen to Kotlass	24	Ovdorsk to Bielkovski Bay by projected rail	15
Kotlass to Archangel by river	5		
Archangel to London ..	10	Bielkovski Bay to London with extras	12
Extras	2		
Total	52	Total	37

Given, on the one hand, the existing land and oversea outlets for West Siberian grain, and the projected lines from Cheliabinsk to Tsaritsin, and from Cheliabinsk to St. Petersburg; and, on the other, the primitive and remote nature of the Yugorski Shar surroundings, the entire absence of population, save nomad Samoyedes, the non-existence of any port accommodation, the general isolation of the proposed railway district even from Archangel, and the brief period of navigation, six weeks or two months, north of the Petchora, the profit or feasibility of the scheme would seem but dubious at present.

The above, then, are the chief land and waterways to feed and bleed the main Siberian line and its traffic. Remembering that the line, as at present constituted, is but a single track, and that the methods of Russian goods traffic are not the most expeditious, these main and side outlets will not be too many. And outlets they will really be, as besides the internal traffic from station to station, and the international through-carriage east and west, it is more with exports than imports that a congestion is likely to occur, however much it may affect both. Before leaving the subject of outlets, it may be of interest to add that the Yenisei has no bar, and is accessible to ocean steamers for 1,500 versts from its mouth, while the Obi is open to sea-going vessels whose draft does not exceed 12 feet.

The general traffic so far.

As the various sections were ready they were opened for regular traffic, the expectations formed under the circumstances being fully realised, as the following progressive totals show*:—

West Siberian Section.

Year.	Number of—		Goods.	
	Passengers.	Immigrants.	Poods.	Tons.
1896	160,000	169,000	10,500,000	169,355
1897	236,000	78,000	21,190,000	341,774
1898	379,000	195,000	30,000,000	483,870

Central Siberian Section.

Year.	Number of—		Goods.	
	Passengers.	Immigrants.	Poods.	Tons.
1897	177,000	..	5,393,000	86,984
1898	476,000	..	11,000,000	177,420

Already, from October, 1896, the number of passengers and

* These totals are taken from the official handbook to the Siberian Railway, issued by the Ministry of Ways, 1900. The official "Journal de St. Pétersbourg"

quantity of goods exceeded the calculations made, and, though extra locomotives and trucks were added, the traffic could not be coped with. A recent American traveller alludes to "the amazing lack of haste in the train service," as the chief idiosyncrasy of the Siberian Railway, but one could hardly expect anything approaching the boisterous rapidity of Transatlantic methods.

Probabilities of future traffic.

What the traffic may be with the extension of the railroad to the extreme eastern ports, and the re-organisation, and possibly re-construction, partial or otherwise, that actual experience may demand it is not easy to foresee, but that it will vastly exceed present figures cannot be doubted, when it is known that it will unite in direct through communication on the one side the teeming millions of Russia first, and then of Europe, and, on the other, the 450,000,000 of Chinese and Japanese, and all the possibilities of international trade that these various nationalities represent. The railway administration counts on obtaining the international mails between Europe and East Asia, a large proportion of heavy shipping freight cargoes, perishable commodities, and goods deliverable by a fixed date. Add to these the passenger and immigrant movement, the internal traffic of Siberia itself, the increasing number of local feeding lines, and all the possibilities called up by the future working of the abundant coalfields of the adjacent districts, and it is evident that this single-track light-railed line, as at present laid, will have in the near future, as it has already had, considerable trouble in coping with the demands on its conveyance capacity. Grain, the chief mainstay of Siberian export trade (unlike the tea traffic expected from China, compact and capable of high freight), is cheap and cumbersome. Apart from commercial considerations, too, the constant conveyance of troops and transport possible at any time cannot be left out of account. All this may render a strict adherence to time-tables out of the question, and some-

gives more recent and still larger totals for the Western and Central Siberian sections for three months of the year :—

Year.	Passengers (including Immigrants).	Goods.
		Poods.
1895	211,000	8,560,000
1896	417,000	11,433 000
1897	600,000	27,485,000
1898	1,049,000	43,371,000
1899	1,075,000	40,759,000

NOTE.—62 poods = 1 ton.

Trade journals protest against statistics. The latter may not always be reliable, and can be sometimes so turned as to prove anything. But, without them, such expressions as "large," "extensive," or "enormous," convey but very vague impressions indeed.

what discount the following comparative computations of the coming rivalry of the new route with the old. The official anticipations are thus put forth. At the present moment there are four large steamship companies* trading between Europe and Eastern Asia, in addition to the Russian Volunteer Fleet and various others. These, in spite of all their efforts, cannot meet the present traffic demand. Taking Moscow as Russia's centre, and London and Shanghai as the extreme limits of western and eastern international intercourse, the land and sea trip from Moscow to Vladivostock takes 40 days, costing first class 600 r. (63*l.*), and second class 450 r. (47*l.*), while the sea voyage from London to Shanghai occupies 34 to 36 days, at from 650 to 900 r. (68*l.* to 95*l.*). Such is the old route. By the new route, we are told, Russians will cover the 8,000 versts from Moscow to Vladivostock, at an average of 35 versts the hour in 10 days at a cost, according to the progressively cheapening tariff of Russia, by "quick" train and in sleeping cars, first class, 114 r.; second class, 74 r.; and third class, 51 r., or, in ordinary carriages, 89, 54, and 36 r. respectively. In other words, the man of means will travel at his ease, and at so-called full speed, from Moscow to Vladivostock in 10 days for 114 r. (12*l.*), while the moujik may cover the same ground, with what to him will not be over-rough accommodation, in an undefined term of days for 36 r. (3*l.* 15*s.*). Then, with London and Shanghai as the points to bridge (not Vladivostock), an Englishman will travel from London to Moscow in three days for 125 r., from Moscow to Vladivostock in 10 days for 114 r., and thence to Shanghai in three days for 80 r. In all, 16 days for 319 r. (33*l.* 10*s.*) by first class fare, or 200 r. (21*l.*) second class, and 130 r. (13*l.* 10*s.*) third class. The result of the comparison is that the overland journey will be over twice as quick and two and a-half times cheaper than by the old route, while time and progress (given no congestion of traffic, and the addition of a second track) cannot but shorten the journey, as Russian trains gradually come up to a faster standard.

Old and new routes. Comparative calculations.

The most direct Trans-European route will be Havre–Paris–Cologne–Berlin–Warsaw–Moscow, a distance of 11,000 versts (7,333 miles), and thence a further run of 2,059 versts (1,373 miles by the Moscow–Samara line to Cheliabinsk, whence the Siberian Railway starts eastward from Europe. "Trains de luxe" leave Moscow every Saturday evening,† provided with sleeping, restaurant, library, and bath cars, with, on the Siberian sections, church and gymnasium cars in addition, probably the

Trans-European route and train service.

* The Peninsular and Oriental Company, the Messageries Maritimes, German Lloyds, and Austrian Lloyds. The Volunteer Fleet has 15 large and fast steamers trading, mostly from Odessa, to the Far East. In 1898, according to the official "Commercial and Industrial Gazette" of St. Petersburg, the amount of goods carried to the Far East by the Volunteer Fleet was 88,313 tons, with 61,947 tons for the return voyage, "and not 25,000 and 30,000 respectively, as recently published by the 'Times of India.'"

† This proving altogether insufficient, it has been decided to run another train weekly from October next from Moscow to Irkutch, and these in addition to the ordinary daily service between Moscow, Samara, and Cheliabinsk.

most luxurious trains in existence. Trains thus run direct now to Irkutch, with a provisional service to Stretensk, whence steamers down the Shilka and Amur to Habarovsk, a distance of 2,164 versts (1,443 miles) complete for the moment, pending the construction of the Manchurian through line, the last link of this great Atlantic and Pacific connecting thoroughfare.

Cost and gain.

From 1891–99 (inclusive) 501,600,000 r. were expended in construction works, about 130,000,000 r. are already provided for 1900, while from 150,000,000 to 200,000,000 r. will be required to complete the whole undertaking. Thus, the whole cost of this ambitious enterprise will run close on, if it does not exceed, 850,000,000 r. This includes some 83,000,000 r. assigned last year for the re-ballasting and re-laying of the permanent way already constructed. As to the paying prospects of the line, the fact cannot be overlooked that it is not essentially an ordinary business undertaking worked for profit, but a great State project of vast political and strategic importance, whose dividends are being secured now, as they will be in the future, in territorial influence rather than coin of the realm. Russians, too, will regard the colonisation and development of Siberia as no insufficient remuneration in itself for the heavy disbursements incurred. Considering what the latter amount to, and the further cost of construction and re-construction, with all the working expenses added thereto, the statements that the line may pay its way and even be remunerative in the near future, are somewhat puzzling, more especially bearing in mind the extraordinary cheapness of Russian railway freights, the army of officials and workmen engaged, and the manner of working the State enterprises of Russia.

Immigration.

At some 200 versts from Cheliabinsk the railway enters the great government of Tobolsk, in extent four times the size of the German Empire. It is in this huge region, the nearest to Europe, that the onward flood of immigration begins to break and disperse. Indissolubly connected with the future of Siberia and its railway this immigration movement, beginning from the time of the emancipation of the serfs, is now under the complete organisation of the authorities. The Siberian Railway Committee, by preliminary requirements and precautions, directs and controls it at every stage, at the same time encouraging and facilitating it by a propaganda among the peasants, by extremely reduced fares, and by the subsequent settlement, distribution, and provisioning of immigrants on suitable sites. Once the territory adjoining the railroad became occupied, vast stretches were drained or irrigated, and, as these became peopled, attention was directed to the "oormans" and "taigas," or forest regions to the north, bordering on the irreclaimable Arctic wastes. These "taigas" are already being colonised, partly by immigrants from Russia proper, and partly by Siberians fleeing from contact with the increasing rush of the stranger element. In all, since 1893, 7,000,000 dessiatines (18,900,000 acres) of State lands, mostly in the Tobolsk, Tomsk, and Akmolinsk

governments, have been transformed into immigration plots, of which 5,000,000 dessiatines are already in occupation. The following figures show the extent of this emigration from Russia to Siberia generally :—

Year.	Number.
1893	61,435
1894	72,612
1895	108,039
1896	202,302
1897	86,575
1898	205,645
1899	223,981

During this present year the immigration movement is assuming even larger dimensions, a local paper stating that on May 22 alone there were over 10,000 immigrants waiting at Cheliabinsk, and that five to six trains were arriving daily by the Samara-Zlatoust railway, crowded with immigrants only, or with "khodoks," or pioneer-emissaries of further groups, while steamers from Odessa are continually taking numbers by sea direct to the Far East.

General through transit trade.

In roughly estimating the through transit trade possibilities of the new route, it is to be noted that it connects Russia proper and all Europe, on the one side, with 400,000,000 Chinese, 35,000,000 Japanese, and the various Russian and other territories of the Far East on the other. It is expected largely to divert goods (silk, tea, &c.) hitherto carried to Europe viâ the Canadian Pacific and Suez Canal. The avoidance of the canal dues, the relatively small difference between Russian railway fares and the sea freight, with the removal of the necessity of expensive insurance, are all brought forward as favourable to the overland route. I have already touched on this through traffic, and therefore now come to the effects of the railway on the international intercourse of Russia herself, and first of all with China.

Trade with China. Tea.

Tea and silk form more than half of China's export trade, and both are articles that can bear even heavier tariffs. The amount of tea, caravan and otherwise, passing through Siberia in 1897 was 1,740,000 poods, and, in 1898, 2,230,000 poods.* Besides rapidity of delivery, if rapid it will be, and other conveniences, or even prejudices, favouring railway conveyance, the special reasons put forth in the interests of Russia, and particularly of China, for the carriage of tea overland are that the United Kingdom, once China's great customer, is now through her Indian and Ceylon colonies a formidable competitor in the export of tea, not only to British territory, but even to Russia. This entails a heavy loss to China generally, and, what she will feel still more,

* According to recent Chinese customs statistics, the amount of tea in general exported from China to Russia in 1899 was :—viâ Odessa, 195,449 piculs ; viâ Kiakta, 537,771 piculs ; to Russian Manchuria, 136,653 piculs.

to her Government in particular. Ceylon teas are increasing in popularity in Russia year by year, the consumption being 6,000,000 lbs. in 1897, 11,000,000 lbs. in 1898, and an estimate of 17,000,000 lbs. for 1899. The question of the incidence of duties must play, as it has in the past, an important part in the further distribution of Ceylon versus Chinese teas into Russia, and in the route the latter take, by sea viâ Odessa, or by land viâ Irkutch.

According to the tariff, partly altered by the decree of June 4/16, 1899, the duties are :—

	Per Pood.
	Roubles c.
Brick tea, black and green (by European frontier)	11 25*
Bohea teas, black, flower, green, and yellow (viâ Irkutch, the Steppes, or the extreme Russian East	22 50
All teas, save brick (by European frontier)	31 50
Brick tea (viâ Irkutch)..	3 75

* Former tariff, 31 roubles 50 c.

Thanks to the difference in duties, brick tea has hitherto entered Russia almost exclusively viâ Siberia, while two-thirds of the others, in spite of an unfavourable tariff, prefer the sea route and the European frontier. The duties are to be still further reconsidered on the completion of the rail to the Pacific.*

The railway, with its Manchurian section, and the development of water traffic in the Amur basin, as well as the import into Russia viâ Odessa, of teas direct from Hangkow and Ceylon, will virtually abolish the ancient caravan trade, which, even if still carried on to some extent, will be drawn to the line in the end.

The most important caravan route is viâ Urga to Kiakta and Irkutch. Other routes, but of less value, connect Western China with the Semipalatinsk region. The general export from Siberia by these roads does not exceed 2,000,000 to 3,000,000 r., and is annually decreasing. The import is almost exclusively tea, which in 1898 reached 1,598,000 poods (57,500,000 lbs.) of a value of 16,292,000 r. (1,720,000*l.*). Excluding tea, the export and import trade of Siberia with China have been about equal in value.

Other goods.

Beyond tea, forming 98 per cent., the other articles of import from China to Siberia have been cotton and silk goods and sugar. What the future may develop is another question. Russia on her side can supply China with cotton and woollen fabrics, meat, leather and hides, manufactured goods in general, and minerals. The rich Ural district, and even Siberia itself, in a more eastern direction, could in time export the latter.

The agreement with China, with the construction of the rail-

* During the seasons of 1900–03 brick tea imported into Siberia viâ the Obi mouths will be dutiable at the rate of 6 r. 75 c. per pood, and viâ the Yenisei, at the rate of 6 r. per pood, or 4¾*d.* and 4¼*d.* respectively per lb.

way through Chinese territory, lays all the fertile fields of Manchuria, and, in general, the resources of China and Corea at Russia's disposition.

Imports from abroad generally.

The imports to Siberia, hitherto mostly viâ the Far East, are thus distributed:—

From Russia: Cheap manufactured articles, tobacco, spirits, sugar, leather, iron goods, paper, fabrics, &c.

From the United Kingdom: Cotton and woollen fabrics, iron, tin, machinery, &c.

From America (viâ San Francisco): Flour and food stuffs, machinery and agricultural implements, arms, leather goods, &c.

From Germany: Thanks to activity of German firms in the Far Eastern ports, Germany has a predominating influence on the import trade of Siberia, her wares in general being of the most varied kind, if but of moderate quality, including manufactured articles, furniture, sugar, wines, household crockery, &c.

From France: Fashionable apparel, preserves, wines, &c.

From Japan: Mostly wheat, rice, salt, and fruits.

From China: A vast trade in tea and practically tea alone.

Foreign trade viâ the Far East.

There are no very recent statistics of the foreign trade of the Far East, and the general conditions are so changing that the figures given to 1896 might be misleading, but hitherto Germany obtained about 30 per cent., and the United Kingdom 25 per cent. This trade is mostly viâ Vladivostock, Nikolaevsk, Blayovestchensk, and Yan. The well-known Volunteer Fleet, with 15 steamers, and the East Asiatic Company of Copenhagen, with special privileges, though running under the Russian flag in conformity with the new law, keep up trading intercourse between Russian European ports and the Far East. The Volunteer Fleet, however, is mainly occupied with military transport, Government freights, &c.

Russian shipping proper in the extreme East itself is of the most limited dimensions. Vladivostock with its ice-breaker, the new free port of Dalni (Talienwan), and the Russo-Chinese Bank are to be important factors in the future Russo-Chinese and Russo-Japanese trading relations.

Foreign trade viâ the West.

The exports from Siberia viâ the West are first of all grain, then meat, hides, butter, wool, game, eggs, &c.

The imports by western rails are iron and iron goods, machinery of all kinds, sugar, spirits, wines, petroleum, manufactured articles, &c.

Resources of Siberia.

In dealing with such a vast subject as the natural riches of Siberia, I can but cursorily touch its main resources, as each branch of the question might easily fill a separate report, nor can I enter on the complicated and changing conditions, Government regulations or customs affecting the tenure of land, or the right of exploiting the forest or mineral wealth of the country. Of these resources, as at present worked, grain holds the first place, forming 42 per cent. of the total export trade, mostly viâ Reval, Libau, St. Petersburg, and Riga.

Agriculture and grain trade.

This year, too, the northern oversea route, viâ the Perm-Viatka-Kotlass Railway and thence by river to Archangel, opens

out a new channel of export to the markets of the West. The colonisation movement already described must greatly influence the future dimensions of Siberian agricultural resources.

Millions of acres are now being colonised, mostly crown lands allotted among peasant immigrants, so that it will take time before the fruits of their labour affect in any appreciable degree the general corn supplies, the more so that cattle-rearing will at first be found more profitable.

Tomsk and Tobolsk, the more western provinces, are the so-called granaries of Siberia. Some 10,000,000 to 12,000,000 poods of wheat are annually exported, the general grain crop of Western Siberia alone reaching some 85,000,000 poods. Wheat comes chiefly from the south-western black-earth parts of the province of Tobolsk, the Steppes and Altai regions, and the south-western districts of the Yenisei Government. Barley and rye are grown in the central parts of the province of Tobolsk, while oats are sown mostly in the vicinity of the railway. The total annual crop is reckoned at 125,000,000 poods, of which Tobolsk and Tomsk yield 20 per cent., Yenisei and Irkutch 12 to 15 per cent. the Semipalatinsk, Semiretchensk, and the Trans-Baikal provinces from 3 to 5 per cent. each, and the Amur, Primorski and remaining centres the rest. The export in 1898 viâ the western frontiers was 10,000,000 poods, while altogether, including the above, over 20,000,000 poods were carried in transit by the railway. It is calculated that, with good crops, some 30,000,000 poods might be the annual surplus for export, over and above the needs of local consumption. In addition to the White Sea and the Baltic, Siberian grain reaches the Black Sea, being conveyed to Rostoff and Novorossisk, a traffic which further projected southern rails will still more largely develop.

Cattle and butter.

The cattle trade, of but small international importance as yet, is one of the profitable internal resources of the peasant population of Siberia, though neither in the breeds nor their produce is there anything remarkable. Some 2,000,000 roubles worth of butter, not in its first freshness, were exported even before the railway, viâ Tiumen and Kourgan, to Nishni Novrogod, and Moscow, and even to Germany. The railway will greatly develop this industry, and at the same time improve the technical production, which at present is primitive and slovenly. Butter manufacturing is being feverishly taken up, however, and every possible, and therefore unsuitable, tenement given up to it. Besides the consumption in Russia, it is shipped from the Baltic, and this year will form one of the minor articles of export viâ the Perm-Kotlass-Archangel route. Over 500,000 poods of Siberian butter are expected for export this year, or about 8,350 tons. Cheaper freights from Australia so far stand in the way of any great development of Siberian tallow export, though Russia might supply, not only herself, but other countries with this article, instead of, as now, largely importing, mostly from the United Kingdom.

Timber.

The forests of Siberia, of almost boundless extent, stretch from

the agricultural regions of the South to the Arctic tundras, and from the northern regions of the governments of Tobolsk and Tomsk to Eastern Siberia, on both sides of the railroad. The timber of the northern "oormans" and "taigas" (wooded mountain ranges) is mostly pine and fir, with, in addition, cedar, poplar, aspen, willow, and birch. In Western Siberia, in the virgin forests of the Tobolsk government, in the Tarski and Turinski districts, birch prevails, varied with poplar and willow. The population in general is denser in the birch centres, this wood being preferred for building and warming purposes. Birch stretches, too, east of the Obi. In the mountain woodlands of all southern Siberia, from Semirechensk to Vladivostock, the various ranges are covered with larch, cedar, pine, and fir, of good building quality, but hitherto not easily accessible. These primeval forest territories are just coming under Government control, the authorities having to step in to restrict the devastations made for agricultural clearings, &c., more especially on the more accessible fringes. Whether, viâ the Yenisei and Obi, these timber reserves will one day reach the British market, will depend on the improvement of the land and waterways of the interior, and the general accessibility of the ocean route, as well as on the complete organisation of the forest system of Siberia.

Fuel. The great want of Siberia, for its railway, its steam navigation, and its industrial and mineral development in general, is fuel, and yet fuel there is on all sides. Its timber, as we have seen, is not easily accessible to the railway. Industrial works, not in the immediate vicinity of the line, will be able, thanks to the great waterways, to get wood for building and fuel purposes, but wood as fuel can have no lasting or practical future in Siberia, and, if at present it is used on the line, this can but be temporary, nor will the industries in general greatly thrive on it.

Coal. Coal is met with in abundance in almost every direction, west and east, as well as along the railway itself, of poor quality however, and so far comparatively little worked. The beds of the Ekibastuz, Sudjenka, and Kuznetz region could supply both Siberia and the Ural, so much in need of fuel, with tens of millions of poods annually. Its meagre quality, of use, however, to metallurgical works, would be somewhat compensated for by its cheapness and accessibility. Coal exists in the Kuznetz, the Ekibastuz, the Kirghis Steppes, the Akmolinsk and Semipalatinsk territories, the latter remarkably rich in reserves, in Eastern Siberia from the Yenisei, Krasnoyarsk and Irkutch districts along the Lena to the Far East, as well as in the Island of Sakhalin, while even along the main line, near the stations of Sudjenka, Tcheremkhovo, and Misovoi, seams of more than average quality have been discovered. The Ekibastuz beds especially, in the neighbourhood of Pavlodar, on the Irtish, flowing to the railway from the south, have an almost unlimited reserve, estimated to contain a supply capacity of some 200,000,000,000 poods, though the quality is anything but first rate. However moderate the quality, the supplies, then, are simply

unlimited, but insufficiently and even primitively worked as yet, capital and far larger enterprise being needed to fully develop them; but with the increasing communications and growing necessities, and judging by the voluminous Press reports, official and otherwise, devoted to this subject, they are now attracting widespread attention, as on this fuel question largely depends the future of the railway, mineral, metallurgic, and, indeed, of all the industries of Siberia generally.

Peat. Then there is peat fuel, so much talked of in connection with the recent Russian coal crisis. Some 150 peat bogs, covering an area of over 4,000 dessiatines (10,800 acres) and containing a provision of over 7,000,000 cubic sajens (1 sajen equals 7 feet), are found in the neighbourhood of the railway route.

Naphtha. Naphtha, too, is found in the Gurieff district of the Ural, and in great abundance generally in Central Asia, while new beds are being constantly reported; but, from want of capital and enterprise, they are either entirely neglected, or worked in the most primitive fashion. The Sakhalin mineral oils have for some time been attracting the practical notice of foreign capitalists.

The gold industry. The gold industry has till recently only been developed in localities producing the richer qualities. The existing cost of labour and of the requisite apparatus, the dearness of credit, the general inaccessibility of the mountain and "taiga" regions, with the want of communications, and of the ordinary necessities of existence and of work, in many of the gold-bearing sites, to which must be added the general fear abroad of the endless formalities and restrictions on enterprise in Russia, have lent but little encouragement to the wider development of hitherto unworked, or but primitively worked, deposits. The railway will bring heads hands, and modern machinery to bear on this industry. Machinery and appliances, needed for gold working in Siberia and the Urals, are now declared duty free, under certain conditions, till January, 1909.

Though from an administrative point of view attached to European Russia, the enormous mineral and metallurgic resources of the Ural district, from which the Siberian Railway starts eastward, geographically speaking belong to the Asiatic Continent. It is impossible to estimate here the effects of the railway generally on the Ural's industries, and *vice versâ*.

The production of gold in Russia during 1898 is given as 2,346 poods, or 1,235,764 ozs., which has formed about the average during the last 20 years.* The average annual production in Siberia for the last 10 years has been about 1,900 poods.

All gold produced has to go through the Imperial laboratories of Ekaterinburg, Tomsk and Irkutch, whence it is despatched to the mint at St. Petersburg, so that hitherto there has been no free choice in the sale or price, a question which has lately been freely discussed in the Russian Press.

Alluvial river gold of the most varied description, forming

* For detailed statistics and information see "The Russian Journal of Financial Statistics, 1900," published in English by W. Kirshbaum, St. Petersburg.

about 93 per cent. of the total yield, is found in the basins of the Obi, Yenisei, Lena, Olekma, Vitim and Amur, and, in fact, in every government of Siberia, the auriferous sand generally being covered with a layer of earth and peat. Gold is found extensively in the north-west parts of the Altai Range, in the Nerchinsk district, in the Trans-Baikal and Eastern Siberia generally, the deposits along the north-west coasts of the Sea of Okhots, now attracting so much attention, being leased out from this year, under certain conditions, to Russians and foreigners for a period of 15 years.*

Silver, iron, &c.

The silver production of Russia from 1892–96 inclusive did not exceed 3,497 poods, of which the Altai region supplied more than two-thirds. Some 800 beds of silver, lead, and copper are known in the Altai, where about 500 claims have been registered, but few worked.

The richest districts are the Zirianovski, Zmeinogorski and Salairski. Silver, lead, copper, iron, graphite, and other metals, as well as varieties of precious stones, are met with in the Altai region generally, the Steppe districts, the Trans-Baikal, and East Siberian ranges. Iron, so important a factor in industrial development, is found in abundance, especially in the vicinity of Kuznetz, but is little worked, in spite of the demand. In fact, it is the same tale everywhere with the mineral wealth of Siberia. The few ironworks hitherto established have fared but poorly, from want of accessibility. The constant needs of the railway itself, and of its future feeding lines, will alone give a great impetus to the development of this trade, the vast Ural supplies being unable to satisfy the demand, owing to the expense of carriage, &c. The comparative poverty of Siberia's turnout in this respect is shown by the following figures for 1898, taken from Consul-General Michell's last report on the general trade of Russia. While the yield for all Russia was 2,194,392 tons of cast-iron, 791,243 tons of iron, and 1,130,383 tons of steel, and for the Ural works 699,340 tons of cast-iron, 248,919 tons of iron, and 128,995 tons of steel, Siberia's output from three works was 8,691 tons of cast-iron, 1,956 tons of iron, and 3,158 tons of steel. Prices are high, and the demand is great and has to be satisfied in Russia generally by the import from abroad, notwithstanding duties. The supply is there, but requires to be got at. And as with iron, so in general with the hidden mineral resources of Siberia, more accessible inland communications, capital and enterprise, with modern methods and appliances, and a nearer demand, should help to turn these little or primitively-worked regions into rich industrial centres.

Want of industries and manufactories

Of other or general industries or manufacturing resources, there are none worth serious mention. The chief resource of Siberia hitherto has been the produce of her fields. Left to herself, and to an ill-omened name, her rich possibilities have for centuries remained but themes of speculation. A wiser ideal, whether in itself the main end, or a necessarily component part, of a grandly thought-out plan has changed the whole prospect,

* See "Board of Trade Journal" for November, 1899.

and we see an entensive and virtually new region of vast resources, capable of far-reaching development, being made from day to day more and more accessible, internally, and from both sides of the Continent. While its cereals are already known to Western markets, its minerals still await men and means and modern methods to bring them forth.

Its chief wants are manufactured articles, the means to manufacture them itself, and all the machinery and appliances requisite for the fuller working of the industrial life of the country generally. Hitherto it has manufactured nothing. All its trade was the export of its raw produce. Its iron came from the Ural, cloth from Moscow and Lodz, household ware and all the smaller articles of every-day necessity from Moscow and neighbouring centres. The trade in general was, and is to some extent, largely in the grip of a few monopolists. The railway will help to distribute it on a more regular, more extended, and more rational basis, and already, through the increasing facilities of communication, the establishment of agencies, and the spread of knowledge of the country and its wants, European firms are despatching their goods to widely distant centres, and it is essentially from abroad that this wider commercial and industrial development must come.

Foreign enterprise.

The increasingly bitter opposition in the Russian Press of the extreme reactionary type to foreign enterprise in Russia and to the influx of foreign capital, or to the "sale of Russia" as it is often called, is not altogether unanimous, having called forth some spirited replies from distinctly Russian organs. Perhaps it would be right to say, with regard to foreign industrial undertakings, that the opposition is not so much to the capital as to the actual working, management and control of Russian resources by foreigners in Russia, be they Belgians, Germans or Englishmen, most of all to the latter who are the last to abandon their national characteristics or citizenship.

The recent questions of the Dnieper Falls Concession and of gold prospecting in Siberia, both projected British enterprises, have intensified this opposition of late, while the acute political feeling provides a general substitute for closer reasoning. It is the struggle between two schools, the one laying stress on Russia as essentially an agricultural country, the other asserting in preference her industrial claims. The latter school knows that without foreign enterprise and foreign capital her industrial forces would come to a standstill. It is hardly too much to say that in the wider sense of the word all the real business of Russia, all her business intercourse with the foreign supply and demand, is in the hands of foreigners, born in Russia or otherwise. They are now from Archangel to Odessa, as to-morrow they may be from Cheliabinsk to Vladivostock, part and parcel, not to say the mainstay of Russia's trading activity. Add to these the hosts of purely German agents and travellers, and to them the British, Belgian, and general foreign element, resident or otherwise, and it is easy to understand the cry of the Slavophile Press which sees that, in spite of the State's most liberal assistance and encouragement, it is

not Russians proper who have developed the essentially wider business views which have wrought so substantial an advance in the recent industrial life of the country. The same thing is seen in the shipping, or rather in the want of it. It is the foreigner who carries the resources of Russia, the few Russian companies of importance being heavily subsidised by Government to enable them to maintain an existence at all.

Openings for British trade.

Coming to Siberia itself, for instance, the few machinery manufacturing works already established have either completely failed—witness the Mamontoff Ironworks, near Irkutch—or are altogether new and working on a small scale, propped up by Government assistance and facilities.

Machinery, implements, and appliances of all descriptions will be the chief needs of Siberia, and it is from abroad they must come. In supplying these needs is the best opening to British enterprise. Beyond the individual advantages, the general benefits to British trade of the so-much-talked-of openings for Englishmen, or English industrial enterprise, in Siberia itself, seem somewhat questionable. Such, whether individuals or establishments, sooner or later become lost to British trade. The hands employed are foreign, the earnings of all concerned are spent, not in the United Kingdom, but abroad, and the owners' interests gradually become centred in the country of their adoption. In the long run, too, they but teach others to do without them. There are, of course, exceptions, especially in large undertakings, giving extensive orders for British-made goods, but even when quality, convenience, or other considerations are evenly balanced, national preference alone must, and does, in the course of time, wear out. It sounds commonplace to say that it is to the direct export of British goods that attention should be directed. To set up machinery or other manufactories in Siberia is no advancement of British trade. It is British goods, not British subjects, that will most benefit the United Kingdom in this sense.

Advertising needs.

Every step of the development in store for Siberia must require foreign-made articles, above all, machinery. And the rivals to be dealt with are, as is known, very wideawake. I would especially lay stress on the either totally insufficient, or else entirely misplaced, advertising of British traders. British Consuls are unanimous as to the misdirected location of the often sumptuous and beautifully illustrated catalogues, &c., that flood their offices—all in the English language, with its intricate system of weights, measures, moneys, and incomprehensible abbreviations. It is a trite subject, and calls down some animadversion on all who touch it, but there it is.

Dealing with Siberia, not to mention the innumerable commercial publications of all sorts in Russian, it is impossible to advertise too much, but it must be in the Russian language, in the daily and commercial press, central and local. The "Russo-English Trade Messenger" (3, Malaia Dmitrovka, Moscow), published monthly in Russian for the advancement of British trade in Russia, does capital work in this connection could it only be

spread about wholesale; but it is the daily and local papers, the annual directories, calendars, address-guides, &c., of every province and prominent town, that reach every district and every class. Take, for instance, the "Siberian Commercial and Industrial Calendar," for 1900, with 390 pages of trade advertisements, the 10 or 12 illustrated ones that catch the eye on turning over invariably have (if there is an English name or an English word) the addition of the letters, "U.S." There is not one British, but plenty of German and various American advertisements, and this book will be in the hands, and constantly so all the year, of everyone in Siberia interested in business.

To put things practically, a list, it may be incomplete, of appropriate publications for advertisements in connection with Siberia, is herewith appended. It would be easy to advertise through international press agencies in London and the large towns, in connection with Russian agencies, or through agents of British firms abroad. German advertisements, illustrated and otherwise, of machinery, &c., with direct reference to Germany or to agents in Russia, constantly occur in the Siberian daily press. It should be noted, however, that price-lists, catalogues, &c., printed in Russian outside Russia, are subject to duty, and to avoid this they should be printed and circulated in Russia through local agents.

Commercial travellers.

Next to advertising extensively in Russian, and in the appropriate places, and to making sure that the advertisements, catalogues, &c., reach the people and districts they are intended to reach, canvassing and personal intercourse cannot be too much practised. Siberia is no longer inaccessible. Russian railway fares are exceedingly cheap. A trip to Cheliabinsk, Tomsk, Omsk, Tiumen, Kourgan, or even to Irkutch, is no longer an impossible undertaking. Nor may that be absolutely necessary in every case. Moscow is the great feeding and distributing centre for Siberia, as well as for Russia. The very heavy taxes and annoying formalities required of foreign commercial travellers in Russia, are at least a guarantee to Russians of the reliability of the firms represented, and do not touch gentlemen travelling round with no very definitely-expressed purpose, or merely to see for themselves what might be done.

A recent bogus advertisement in a British paper, entrapping a Russian applicant, has been followed by an official notice in the Russian papers, warning people not to answer British advertisements unsupported by preliminary inquiries from reliable sources. It should be noted, too, that English is but the port language, while, for reasons set forth above, German is far more the international business medium of the whole of Russia. English but reaches the sea fringes, or aristocratic circles, French almost exclusively the latter, German well-nigh every business centre, and Russian reaches all.

British agents and travellers should not be tied down hard and fast.

The day is past when it could be said: "These are the

articles we produce." Take machinery, for instance. It is often not solid and lasting and really first-rate make that is needed, but cheaper and lighter goods, adapted to special requirements, and to the peculiar exigencies of Russian methods. Siberia is not being populated by capitalists, but by more or less well-to-do peasants. In larger enterprises, as the new business advances, the machinery may be extended and improved. British manufacturers should be ready and willing to make the desired alterations, to accept the suggestions hinted, in a word to adapt their goods to the varying demands. If they don't or won't, others will.

Though, in general, money is tight in Russia now, and failures are the order of the day, over-production and over-speculation bringing their natural consequences, yet with all due precautions, and once assured on this point beforehand or subsequently, credit facilities should be largely granted. Innumerable orders have been lost in Russia through a too strict application of possibly business rules in this respect, though, as regards Siberia itself, the fact must not be lost sight of, without giving it unnecessary prominence, that till recent years its colonisation was almost exclusively involuntary. The particular circumstances of each case can alone govern proceedings in this matter.

The Germans, among other advantages, in their trade with and in Russia, have newspapers of their own, mostly daily, printed and circulated in Russia in the German language. There is one such at St. Petersburg, and another at Moscow. The British have not one. These daily German organs, published in Russia, and circulating wherever there is a German to be found, cannot but be of use to firms at home, as well as to Germans in Russia, in making them authoritatively acquainted, in their own tongue, with the openings and requirements, and with all that goes on in the commercial and industrial world of Russia.

These are but a few main observations, containing nothing new. In two words, besides personal canvassing, the establishment of agencies, and the holding of exhibitions in various centres of Russia, and Siberia too, advertise widely, locally, accessibly, and in Russian, but see that your advertisements and catalogues reach likely destinations, and not waste-paper baskets. If the catalogues are well got-up and illustrated, or even bound, they are more likely to be kept and shown about.

Goods the United Kingdom could supply.

Returning to the openings likely to present themselves for British goods, first and foremost is machinery in its widest sense. The railway traversing Siberia, and its numerous present and future feeders, will at any time need rails and rolling stock; her seas and stupendous rivers, shipping craft of every kind from ice-breakers, dredgers and steamers to launches; her rich minerals, still buried or but primitively worked, will require boring, washing, and all the other varied mechanical appliances of the mining industry; her cornfields, agricultural implements; her forests, sawmill machinery; her bogs, peat-drying apparatus; and, in general, labour-saving, time-saving, and scientific instruments of

all kinds. These, her future, and other kindred industrial works must need building material, electric light, and other electric plant, fire-saving appliances, &c. And it must not be overlooked that British trade has America to compete with, as well as Europe. American manufactories are already supplying materials and machinery for the Manchurian Railway.

The industrial, and certainly the higher agricultural development, will, however, take time. The lands are mostly colonised by peasants of moderate means and primitively conservative habits. The State is the chief landowner. Light, portable, cheap machinery and implements there will be most demand for. Dairy appurtenances should find a market, too, owing to the extensive production, primitive enough, of butter.

It must be noted that the duty on gold-mining machinery for Siberia and the Urals has been temporarily remitted, and, on agricultural implements, either remitted or reduced.

Besides the above, and coming to other branches of possible import trade to Siberia, manufactured goods of all kinds, the simpler luxuries and necessities of everyday existence, cotton and woollen fabrics, preserves and tinned provisions, spirits and wines, &c., will be sure to be in request. Sporting accessories, guns, and fishing gear of an inexpensive description should also be mentioned. Above all, the too perfect and too costly make must be most guarded against in almost every article likely to be in demand.

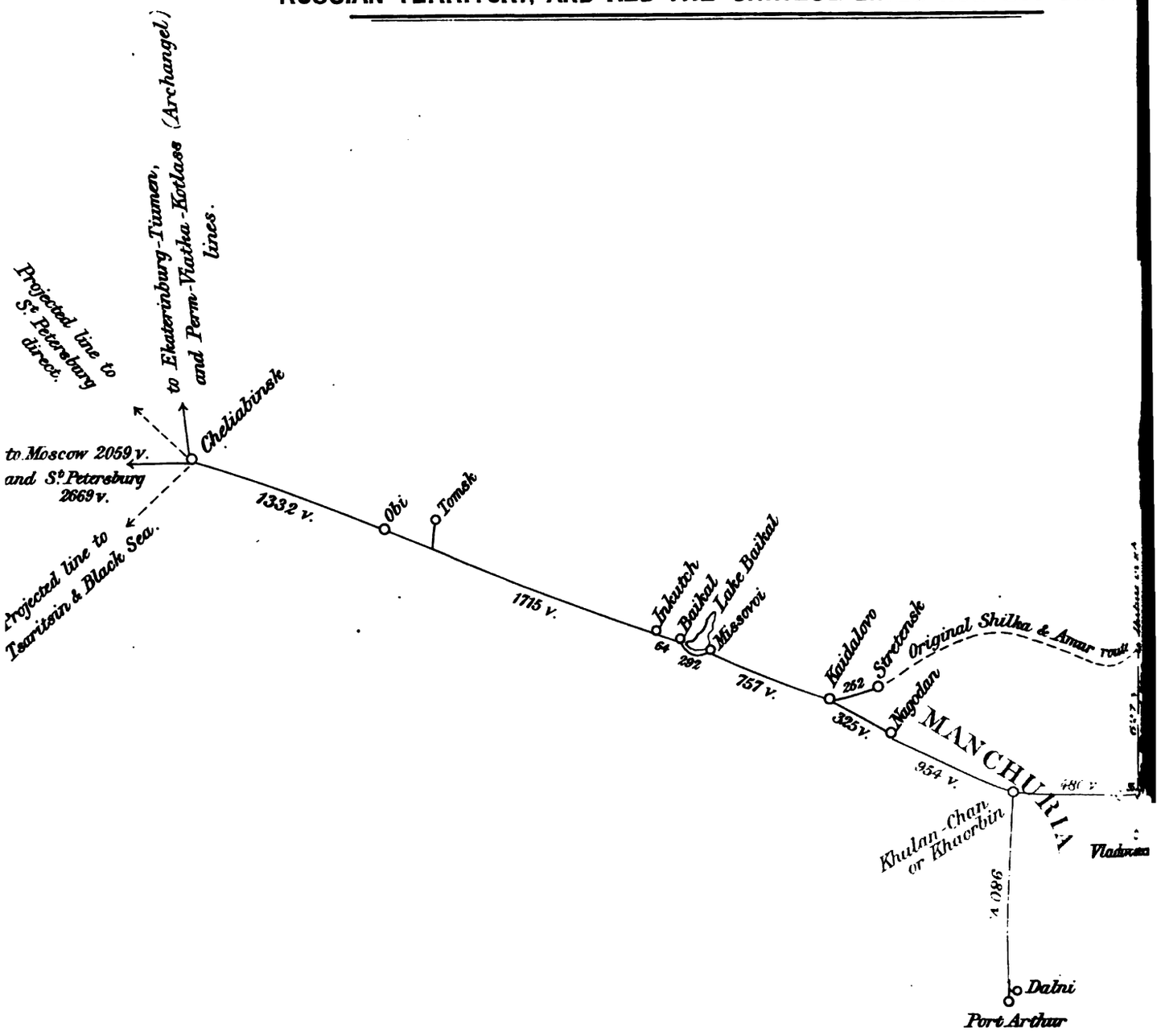
Both in Siberia itself, and in the Farther East, villages are springing up into thriving towns, and hitherto sleepy townlets into busy trading communities. From Kotlass, the terminus of the line to the White Sea, to Cheliabinsk its starting point eastward through Siberia, and on to Stretensk, Khaorbin, Nikolskoe, Port Arthur, and everywhere midway, these and other once unknown villages, or relatively unimportant towns, have suddenly leapt into world-wide prominence, each to play its part in the commerce of East and West. For much that is wanted all around they have already, to some extent, applied to the United Kingdom, but in general British traders must go to them.

The field then is before British enterprise, and, in spite of some stiffish natural obstacles, and considerable artificial hedging and fencing, there is no reason why it should not run through, if not ahead at least abreast of Continental and Transatlantic rivals.

Owing to the vastness and variety of the whole subject, of which this report gives but a rough outline, much that might perhaps have been of interest has of necessity been omitted or abridged. I can only refer those who may desire such further information on any point, as it is possible to furnish, to the recently published conditions under which inquiries can be addressed to myself.

Appendix A.

ROUGH SKETCH OF ENTIRE ROUTE, AND DISTANCES IN VERSTS (1 VERST = ⅔ MILE), BLACK SHOWING THE RAIL PASSING THROUGH RUSSIAN TERRITORY, AND RED THE CHINESE LINES NOW BUILDING.



Progress in construction:

Open for regular traffic Cheliabinsk to Lake Baikal.

" " " " Habarovsk to Vladivostock.

Rails laid and provisional traffic arranged Lake Baikal to Stretensk. The Chinese lines now building. The southern half of the Khaorbin–Port Arthur line is now laid, from Port Arthur to Mukden and Telin (May 1900). The small branch from Tomsk to Taiga, on the main Siberian line, is open for traffic, the distance being 82 versts. Various other branch feeding lines, north and south of the main line, are building or projected. The line from Baikal to Missovoi, round the southern bend of the lake, is not yet building. The lake crossing is 60 versts.

1 verst = ⅔ mile.

Annex B.—DISTANCES from Moscow to Vladivostock by the Lines now Working or in Process of Construction.

Section.	Direction.	Distance.		Remarks.
		Versts.	Miles.	
European connecting line	Moscow–Cheliabinsk	2,059	1,373	
West Siberian	Cheliabinsk–Obi Station	1,332	888	Open October 1, 1896
Central Siberian	Obi Station–Irkutch	1,715	1,143	„ in 1899
	Irkutch–Lake Baikal	64	42	„ in 1899
Circum-Baikal	Along southern bend of Lake Baikal	292	195	Projected*
Trans-Baikal	Missovoi, on Lake Baikal, to Kaidalovo (a station 252 versts this side of Stretensk)	757	505	Lines laid and provisionally opened
Trans-Baikal to Chinese Frontier ..	Kaidalovo–Nagodan (on the Chinese Frontier) ..	325	216	Building
Main Manchurian	Nagodan, through Manchuria, to Khulan-Chan or Khaorbin	954	636	„
Manchurian and Ussurian	Khulan-Chan–Vladivostock	677	451	„
	Moscow–Vladivostock	8,175	5,449	

* The lake is crossed at present by steam-ferries and ice-breakers, so that till the Circum-Baikal Line is built, 292 versts must be subtracted from the above distances and 60 added for the lake crossing. The lake begins to freeze in November, is 4½ months ice-covered, and bearable for about 3 months.

Distances from Moscow to Habarovsk.

Section.	Direction.	Distance.		Remarks.
		Versts.	Miles.	
(As above)	Moscow–Khulan-Chan (Khaorbin)	7,498	4,999	(As above)
Manchurian and Russian	Khaorbin–Nikolskoe (on Ussurian Line)	575	383	Building
Ussurian Line	Nikolskoe–Habarovsk	627	416	Opened in 1897
	Moscow–Habarovsk	8,700	5,800	

Distances from Moscow to Port Arthur.

Section.	Direction.	Distance.		Remarks.
		Versts.	Miles.	
(As above)	Moscow–Khulan-Chan (Khaorbin)	7,498	4,999	(As above)
Southern section Chinese Eastern Line	Khaorbin–Port Arthur viâ Mukden (200,000 inhabitants)	980	653	About half laid
	Moscow–Port Arthur	8,478	5,652	

Note.—From St. Petersburg to any of the above stations the distance will be increased by the addition of the 610 versts (407 miles), separating that from Moscow.

Annex C.—PRINCIPAL Towns on Main Siberian Railway or Connected therewith by Branch Lines or River Communications.

Town.	Position.	Population.	Distance by Rail to—		Banks.
			St. Petersburg.	Moscow.	
			Versts.	Versts.	
Archangel	600 versts by river from Kotlass–Perm line	20,000	1,659*	1,049	State. Russian bank for foreign trade
Barnoul† ,, ..	On Obi, flowing north to Obi station	29,408	4,401‡	3,891‡	Siberian Commercial
Blagovestchensk ..	On rivers Amur and Zeia	32,606	8,278§	7,668§	State. Russo-Chinese. Siberian commercial
Cheliabinsk ..	Main line (starting point eastward)	20,000	2,669	2,059	State. Siberian commercial
Chita	Trans-Baikal main line	11,480	..	..	State. Russo-Chinese
Ekaterinburg ..	Junction of lines to Cheliabinsk, Tiumen, and Perm-Kotlass	55,488	2,900	2,290	State. Siberian commercial. Volga-Kama
Habarovsk	Ussurian line and river Amur	15,000	9,310	8,700	State
Irbit	On river Nitza, flowing into Tura to Tiumen	20,064	(See Tiumen)		
Irkutch	On river Angara and main line near Baikal	51,484	5,718	5,108	State. Siberian commercial. Russo-Chinese
Kotlass	On river Dwina, northern rail terminus of Cheliabinsk–Archangel route	..	4,178	3,568	
Kourgan	On main line and river Tobol	10,384	2,910	2,300	Siberian commercial
Krasnoyarsk ..	On Yenisei and main line	26,800	4,712	4,192	State. Siberian commercial
Minusinsk† ..	On Yenisei, flowing north to Krasnoyarsk on main line	10,250	..	..	Moscow town
Nikolaevsk	On Amur and Strait opposite Sakhalin	..	..	..	
Omsk	On rivers Om and Irtish, and on main line	42,593	3,415	2,805	State. Siberian commercial
Perm	On Cheliabinsk–Perm–Kotlass branch	45,403	8,367	2,757	State. Siberian commercial. Volga-Kama

* Viâ Moscow.
† Branch lines are projected or being built from these stations to the main line.
‡ From Obi station.
§ By river and rail.

PRINCIPAL Towns on Main Siberian Railway or Connected therewith by Branch Lines or River Communications—continued.

Town.	Position.	Population.	Distance by Rail to—		Banks.
			St. Petersburg.	Moscow.	
			Versts.	Versts.	
Port Arthur ..	Gulf of Pechili and southern terminus of Khaorbin-Mukden branch line	20,000	9,008	8,478	
Petropavlovsk ..	On main line and river Ishim	20,000	3,159	2,549	State
Stretensk	On Shilka river and Trans-Baikal main line	8,000*	7,081	6,471	
Tiumen	On River Tura, flowing into Tobol, and on Ekaterinburg-Cheliabinsk line	29,620	3,204	2,594	State. Siberian commercial
Tobolsk†	On Tobol and Irtish, both flowing from main line ..	20,058	3,607‡	2,997‡	State
Tomsk	On river Tom, tributary of Obi, and on branch to main line	52,430	4,298	3,688	State. Siberian commercial. Russian for foreign trade
Viatka§	On Cheliabinsk-Perm-Kotlass line	24,782	1,388	991	State. Volga-Kama
Vladivostock ..	On Ussurian line and Pacific	30,000	8,785	8,175	State
Yeniseisk† .. .	On river Yenisei, flowing north from Krasnoyarsk on main line	11,539	(See Krasnoyarsk)		Yenisei town

* Increased from 1,700 in 1897.
† Branch lines are projected or being built from these stations to the main line.
‡ By river and rail.
§ A line has been projected from this station direct to St. Petersburg, viâ Vologda.

NOTE.—Towns in *italics* are connected with but not in Siberia.
For places beyond Lake Baikal, till the Circum-Baikal line is built, 292 versts must be subtracted from the above distances, and 60 versts added for the lake crossing.
The Russian Bank for Foreign Trade has a branch in Gracechurch Street, London.
1 verst = ⅔ mile.

Annex D.—Some General Publications in which to Advertise.*

The numerous daily newspapers of St. Petersburg, Moscow, and all parts of Russia.
The official Government Gazette of each of the ninety provinces (in some cases the only local paper).
The various commercial and industrial directories for all Russia, or districts, or towns. The Address-Calendars (annual) of nearly every government and town.
The "Birjevi Viedomosti" (Bourse Gazette), daily, of St. Petersburg.
The "Torgovo-Promishlennaia Gazeta" (Commercial and Industrial Gazette), daily, of St. Petersburg.
The "Promishlenni Mir" (Industrial World), weekly, of St. Petersburg.
The "Selski Kozain (Farmer), weekly, of St. Petersburg.
The "Uralski Torgovo-Promishlenni Addresni Kalendar" (Ural Commercial and Industrial Address Guide), annual, Perm.
"Ural," daily, of Ekaterinburg, &c.

* See text, p. 22.

Annex E.—Some Siberian Publications in which to Advertise.

Name.	Published at—
"Vostochnoe Obozrenie" (Eastern Review), daily	Irkutch
"Sibirskaia Torgovaia Gazeta" (Siberian Commercial Gazette)	Tiumen
"Stepnoi Kraj" (Steppe Region)	Omsk
"Akmolinski Oblastni Viedomosti" (Akmolinsk Gazette) ..	Omsk
"Yenisei," three times weekly..	Krasnoyarsk
"Yeniseiski Gubernski Viedomosti" (Yenisei Gazette) ..	Krasnoyarsk
"Sibirski Listok" (Siberian Leaf), twice weekly	Tobolsk
"Tobolski Gubernski Viedomosti" (Tobolsk Government Gazette)	Tobolsk
"Viestnik Zolotopromishlennosti" (Gold Industry, and Minerals generally), fortnightly	Tomsk
"Sibirski Viestnik" (Siberian Messenger), daily	Tomsk
"Sibirskaia Jian" (Siberian Life), daily	Tomsk
"Sibirski Torgovo-Promishlenni Calendar," annual (Siberian Commercial and Industrial Calendar)	Tomsk
"Dalni Vostok" (Far East), three times weekly	Vladivostock
"Vostochni Viestnik" (Eastern Messenger)	Vladivostock
"Vladivostock"..	Vladivostock
"Amurskaia Gazeta" (Amur Gazette), daily	Blagoviestchensk
"Zabaikalski Oblastni Viedomosti" (Trans-Baikal Region Gazette), daily..	Chita

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1 verst	.. .. .. =	⅔ mile
1 dessiatine	.. .. ..	2·7 acres
1 sajen	.. .. ..	7 feet
1 pood	.. .. ..	36 lbs. (about)
62 poods	.. .. ..	1 ton (about)
1 funt	.. .. ..	14½ ozs. (about)
9 r. 50 c.	.. .. ..	1*l.* (about)

LONDON :
Printed for Her Majesty's Stationery Office,
By HARRISON AND SONS,
Printers in Ordinary to Her Majesty.
(75 1 | 01—H & S 621)

GENERAL LIBRARY,
UNIV. OF MICH.
JAN 20 1902

No. 538 Miscellaneous Series.

DIPLOMATIC AND CONSULAR REPORTS.

SPAIN.

REPORT ON THE

MINING INDUSTRY IN THE PROVINCE OF GALICIA.

Presented to both Houses of Parliament by Command of Her Majesty,
NOVEMBER, 1900.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY HARRISON AND SONS, ST. MARTIN'S LANE,
PRINTERS IN ORDINARY TO HER MAJESTY.

And to be purchased, either directly or through any Bookseller, from
EYRE & SPOTTISWOODE, East Harding Street, Fleet Street, E.C.,
and 32, Abingdon Street, Westminster, S.W.;
or JOHN MENZIES & Co., Rose Street, Edinburgh,
and 90, West Nile Street, Glasgow;
or HODGES, FIGGIS, & Co., Limited, 104, Grafton Street, Dublin.

1900.

[Cd. 353—3.] *Price One Penny.*

Report on the Mining Industry in the Province of Galicia

By Mr. Consul Talbot.

(Received at Foreign Office, September 17, 1900.)

Mineral wealth of Galicia known to Celts and Iberians. Metals found.

The mineral wealth of the province of Galicia has been known from a very remote period. The Celts and the Iberians, according to the testimony of various historians, knew and profited by the deposits of tin, iron, lead, gold and silver, &c., which were found in abundance. Tin was found almost on the surface of the ground. The existence of gold was also known from very ancient times in the region of the River Sil, in the sand of which it was found and carefully washed.

Red lead.

Minium (red lead) was found in large quantities in the South of Galicia, and it is believed that the derivation of the name of the River Miño is due to this fact. It is not clear that the ancient Iberians and Celts had profited to any great extent by this natural wealth, since the difficulties of extraction and transport, and the backwardness of civilisation retarded their operations.

Advent of Phœnicians.

The mineral importance of Galicia entered on a new phase with the arrival of the Phœnicians on the coast. These intrepid navigators, who at the same time were skilful traders, were in want of these minerals, which did not exist in their country. After exploring the Mediterranean and passing the Pillars of Hercules they arrived at Galicia, and from their vessels were able to assure themselves of the abundance of minerals in that country.

Development of tin by Phœnicians.

Tin, which might almost be said to be sparkling on its coasts, was collected in considerable quantities with little trouble and with the assistance of the Celtic inhabitants, and conveyed to Phœnicia. Without going far inland the Phœnicians were able to procure lead, iron, gold, silver, and other metals which abounded in these parts, and instructed the Celts how to extract these products hitherto unknown to them.

Names of islands from which tin was extracted.

The working of tin or "casseters" was, at this epoch, very active; the islands from which it was extracted were called Casseterides, and amongst them the present islands Cies, Aro, Arosa, Sisargas, and others on this coast, according to some historians. Others on the contrary believe that this name solely

applied to the Sorlingas, or Scilly Isles, and other islands near England, also abounding with this metal; the probability appears to be that both are in the right, as from both sources tin arrived in Phœnicia. At that time many geographical facts were unknown, navigation and science were backward, and the Phœnician merchants wished to conceal the sources from where they procured the minerals in order to impede other explorers from following the same route, so that undoubtedly the term Casseterides referred to the islands off the Galician coast as well as to the Scilly Isles.

Not sufficient transport by vessels.

The quantity of this metal was so great that there were not sufficient vessels to transport it, and it was found necessary to leave it deposited in stonewalled inclosures, covered over, so as to prevent injury to the metal. These deposits, without doubt, were placed near lighthouses, which the Phœnicians erected, and one of which was that of Hercules, near Corunna, and gave rise to the building of important towns in their neighbourhood.

The explorations of the Phœnicians were not confined to Galicia, as is well known, but were extended to the north, and in union with the Celts occupied the Sorlingas, near the headland of Lands End, in England, and the countries on the Baltic.

Greeks follow Phœnicians.

The Greeks continued the work carried out by the Phœnicians, and although they did not show so much activity as the latter, they directed their investigations more towards the interior, and especially to the South of Galicia. At this period the extraction

Gold in sands of River Sil.

of gold from the sands in the neighbourhood of the River Sil was the most important, and the founding of towns like Orense and others was the result of these works. Silver, argentiferous lead and tin were also the objects of their explorations.

Invasion of Carthaginians.

During the invasion of the Carthaginians, the importance of Galicia did not diminsh as regards its minerals, as the people of Phœnician origin still retained the initiative which characterised their ancestors.

The Carthaginians continued extracting the tin, so much appreciated at that time, and other minerals in which they were deficient, such as lead, iron, silver, copper, and gold, which they found existing in Galicia.

Arrival of expedition of Hamilcar.

Amongst the expeditions which arrived in Galicia in search of its treasures is mentioned that of Hamilcar, and at that time numerous factories were established, which collected different minerals and sent them to Carthage.

The Carthaginians being of a military and warlike spirit, collected the metals with which to manufacture arms, and it is noticeable at this epoch that they possessed very superior weapons on account of the excellent temper of the steel found in these parts, excelling that existing in other regions.

Romans arrive about 60 B.C.

Some 60 years before Christ, Roman ships arrived for the first time, and it was then that the mineral importance of Galicia

Mineral importance of Galicia at its height.

was at its greatest height, owing to the advanced knowledge of extraction which the Romans displayed wherever they opened up the treasures which the soil possessed. The working of the

mines was carried on by large gangs of slaves and military prisoners.

Gold was their principal objective, and they initiated their chief work in Galicia, establishing themselves in the districts of the Rivers Sil and Miño, Valdeorras Oural, Valle de Oro, Tasouro, Rio de Oro, names which remain from the Roman period and which show the importance that region possessed for the extraction of gold. For in all this district deep shafts and extensive galleries were opened and enormous works carried out, such as the tunnel of Montefurado, by which the course of the River Sil was deviated, in order to arrive at the gold in its sand; a work admired by experts and engineers for its boldness and for the science shown. They also constructed canals for washing the gold, and deep caves, the exit of which is even now not known.

Extraction of gold by Romans in Galicia.

Extensive works near the River Sil.

Another of the vestiges which remain to this day of the extensive mineral explorations of the Romans are the vast heaps of tailings, from which gold and silver have been washed, found near Ponferrada, and close to large galleries, subterraneous excavations and aqueducts.

The process which the Romans adopted for washing and profiting by the extraction of the gold was also curious. As the rivers which traversed the auriferous region had their source at a level higher than the hills, the minerals of which were being worked, they contrived by means of canals and aqueducts to raise the water to a sufficient height on the said hills to arrive at the original water level; they then constructed a large open gallery inside the hill, and others branching from it formed a kind of subterraneous net work. By afterwards placing at the brow of the hill, trunks of trees, &c., the water of the river was then allowed to enter by the main gallery; this being full, the earth was softened and the hill gradually worked away by the means of water existing within. The earth and water being mixed, the former was stopped by the barriers of trunks, the water rushing into the valley with the lightest part of the earth. When the water ran clear, the course of the river was altered and the thickest earth collected, which had remained at the barriers of trunks and contained the metal. The washing was then proceeded with, cubes or funnels of wood being used to extract the mineral.

Ingenious process adopted by Romans for extracting gold in the hills.

A great number of workpeople and especially women, in the district called "Aldeanas," applied themselves to washing these sands and particles of gold, which they afterwards treated with mercury.

Great numbers of women employed.

The ovens used in the making of tiles found in this region, and a multitude of appliances used by these intelligent miners for working the different minerals of the country also belong to this Roman period. Their knowledge in this class of industry was, so to say, superior to that of the present day, for the explorer of to-day follows nearly always the traces left by the Romans in order to find the lodes, and it has been noted that if they leave these traces they cannot easily find the mineral.

The superior knowledge in mining possessed by Romans.

Interesting facts given by Pliny and Livy.

The historians Pliny and Livy give us some very interesting facts about the extraction of gold in Galicia, the annual production of which amounted to more than 20,000 lbs., and, it appears, was employed by choice in the manufacture of ornaments to adorn the Roman matrons. In all this region, besides the vestiges of works and mines, old Roman coins in great abundance were found.

On the advent of the barbaric tribes the working of minerals ceased.

With the advent of the barbaric tribes the working of minerals ceased, and the country was very much impoverished, causing the ruin of many districts.

Mineral production neglected till commencement of present century.

Although with the invasion of the Arabs a new impulse was given to agriculture and trade in Spain, yet undoubtedly with the termination of the Roman occupation the glorious history of mineral production in Galicia was closed, not to return until much more recent times, namely, at the commencement and middle of the present century, when the development of minerals was not completely inactive, since different undertakings established sometimes by private means, or by companies, were carried out in different parts of this province.

Want of capital and scientific intelligence impede development of mines.

The want of capital in some cases prevented the acquisition of the necessary machinery to carry out the work of development in a proper manner, and the exclusive employment of manual labour caused the expenses to be excessive, sufficient ore not being produced to pay the cost. In other cases the want of intelligent and practical scientific direction in this class of work paralysed the efforts of the undertakings.

Also want of communication.

The want of communication was another of the obstacles which had to be contended against for transport to the coast; the mineral was conveyed in common country bullock carts over very bad roads, making the successful working of the mines very difficult if not impossible.

Abortive attempt of a British Company to produce gold from banks of River Sil.

In spite of this some foreign companies came also to undertake works in these regions at this time, with, however, very little result; amongst them was a British company which spent all its capital in excavating the banks of the River Sil in search of the much-coveted veins of gold, which it was thought produced the grains that had been found in the sands from a very remote period. But fortune did not crown the efforts of these explorers, and to this day the original source of the gold in these mysterious sands remains unknown.

Abundance of mineral waters in province.

The abundance of mineral waters in this region was an indication of its mineral richness, and it can only be attributed to the apathy in this country for industrial and mercantile association that these natural riches have not up to the present time been developed on a large scale and with practical results.

Change of ideas now set in.

Fortunately, in these latter days a change of ideas in this respect appears to have set in, and for some years important claims have been allotted and companies have been constituted with sufficient capital to push forward the necessary works.

Iron mines.

The most important iron mines in Galicia exist in the northern part of the province of Lugo, in the neighbourhood of Vivero and Rivadeo. Various lodes at the first of these places were acquired

Various lodes acquired by

by a German company: 'The Vivero Iron Ore Company, Limited," with offices in London, who commenced without delay to construct an aerial tramway 5 kiloms. in length to transport the ore to a quay on the west side of the Bay of Vivero, alongside which vessels of large tonnage can lie at low tide. Shipments of the ore commenced in the autumn of last year. The quality of the metal is phosphoric in the proportion of 50 per cent. of fine iron, 1½ per cent. of phosphorus, and ·010 per cent. of manganese. The Thomas process is used for the manufacture of the steel, utilising also the phosphorus for mineral manure.

German "Vivero Iron Ore Company."

Quality of metal phosphoric.

It is calculated that the quantity which will be extracted during the present year will not fall below 125,000 tons, the transport of which to Rotterdam has already been contracted for by a steam navigation company in Bilbao. The quantity of the mineral which is calculated to exist in the zone is put at 5,000,000 cubic metres, or about 15,000,000 tons weight.

In the neighbourhood of Rivadeo an important mineral zone also exists which has been purchased by a Bilbao company, who have also commenced important works. This mineral contains 50 to 52 per cent. pure iron.

Important mineral zone near Rivadeo.

In the south-east of the province of Lugo there is a mountainous district, from which two affluents of the River Minho take their source, called "El Incio." The importance of this region has been known from very ancient times, and to this day ruins of old ironworks and Catalan foundries exist in which steel and iron of excellent qualities were produced, famous through the country, by the simple means in vogue in those times; a sufficient proof of the excellence and purity of the ore.

Important region south-east part of province of Lugo.

This ore contains 57 to 62 per cent. of pure iron, and 1·15 to 1·20 per cent. of phosphorus; also, there are ores still purer, containing merely 0·06 per cent. of phosphorus, only applicable to the production of steel by the Bessemer process. The quantity of iron existing in this particular zone amounts to a figure so large that it is impossible it can be worked by one company alone.

Analysis of ore.

There are many parts of this district in which the subsoil belongs to the transition period, and is formed by strata of quartz and slate (" pizarra ") of various colours, united to the phosphoric iron ore.

In spite of the above advantageous circumstances the said mines have still to be worked, owing to the want of economical means of transport. A narrow-gauge railway, starting from the workings and joining the main lines, to convey the mineral to the ports of Vigo or Corunna for shipment, was first projected, but inquiries made by the owners of the mines, actively assisted by mercantile corporations located close to the railway, with a view to establish a settled economical tariff of transport, which would make competition possible and cover expenses, proved useless, and this project was abandoned. Ultimately, the idea of a mineral railway from Valladolid to the port of Rivadeo was carefully considered, and the survey of this line is now being carried

Want of economical means of transport.

Mineral railway decided on.

out, thus allowing the working of these important mines to be accomplished in the near future.

Important lodes of iron to be found in province of Lugo.

Important lodes of iron are to be found in all the province of Lugo, where already in olden times the name of Sargadelas was celebrated for its iron, of which the pipes for the Lozoya Canal were made. Many properties are at the present moment being opened up.

Properties acquired by Brussels Company.

In Parga and Baamonde, near the railway to Corunna, the Colonial Industrial Company, of Brussels, have acquired some properties. The works have been already commenced, and they promise to show an excellent result. Other properties have been purchased by the same company near Porto do Porco, a few miles from Betanzos, and the working will soon commence, the mineral being sent by the Northern Railway Company for shipment at Corunna as soon as the harbour works, now being executed, admit of the waggons being brought alongside the vessels lying at the quays.

Claims being denounced in north part of province of Corunna.

In the north part of the province of Corunna iron ore is to be found between Ferrol and Betanzos and in that neighbourhood, and various claims have been, and are being, allotted almost daily, although it does not appear that the working of them is being yet realised.

Extraction of iron in Galicia entered on new era.

To sum up, it can be said that the extraction of iron in Galicia has entered on a new era, which will, without doubt, contribute to the well-being and prosperity of the country, and the deposits will supply the place of those which have been now worked so many years in the province of Vizcaya.

Mines of tin and wolfram.

Mines of tin and wolfram exist principally in the west central portion of Galicia, in the district of Noya, province of Pontevedra, and are being worked by the British companies, San Pink Tin Mines and Siden Tin and Wolfram Mines, whose capital amounts to 71,000*l.* in 1*l.* shares.

The production of wolfram, until lately neglected, has now become of considerable importance as the first best material for the manufacture of special classes of steel, and is almost entirely exported to Germany, while the tin goes to England.

Mines of auro-arsenical pyrites.

The most important of the auro-arsenical pyrite mines have been found in the districts of Ferrol, Betanzos, Puentedéume and Monfero, and in the first mentioned some have been acquired by a Belgian company, who have commenced an aerial tramway to transport the mineral.

Gold mines.

Besides the working of auriferous sand, as mentioned before, on the banks of the River Sil, mines already worked during the Roman period have been carried on in the district of Carballo, between Finisterre and Corunna, by the English Sagasta Mining Company, and although the output is not very abundant, there is every probability of its continuing for some years yet. The ore contains some 8 to 15 dwts. of gold per ton. The works for extracting the gold are on the spot, and the latest class of machinery is used for that purpose, worked by water and steam-power combined.

In the province of Lugo, and at about some 8 miles distant from the capital town of that name, there are several gold claims acquired by foreign companies, and it appears that the analyses of the ore have given satisfactory results.

Other classes of mines.

In different parts of the province of Galicia, numerous lodes exist of other products, copper pyrites, asbestos, arsenic, manganese, nickel, antimony, &c., which though being of less importance are still worthy of mention.

Future mineral prospects of Galicia.

The foregoing short report will give some slight idea of the future mineral prospects of the province of Galicia. Perhaps the time is not far distant when the development of the minerals will raise these ports to the importance of those in other northern parts of the Peninsula, giving more occupation to the working classes and regenerating agricultural and commercial industries.

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SWITZERLAND.

REPORT ON

BRITISH TRADE WITH SWITZERLAND FOR THE YEAR 1899.

REFERENCE TO PREVIOUS REPORT, Miscellaneous Series No. 509.

Presented to both Houses of Parliament by Command of Her Majesty,
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No. 542. Miscellaneous Series.

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Report on British Trade with Switzerland for the Year 1899 *by Mr. J. C. Milligan, British Commercial Agent.*

(Received at Foreign Office, November 7, 1900.)

Introductory

The trade and industry of Switzerland for 1899 point to a steadily increasing prosperity of that country, as not only have the principal nations of the commercial world increased their purchases, but her home trade also shows a marked improvement, her imports having increased by about 5,000,000*l.* during the past year.

The general trade of Switzerland in 1899 amounted to 78,000,000*l.*, or 7,000,000*l.* more than in 1898, viz.:—

	Value.
	£
Imports	46,504,000
Exports	31,840,500
Total	78,344,500

or about 26*l.* per head of the population.

Imports.

The total imports into Switzerland in 1899 amounted to 46,504,000*l.*, or an increase of nearly 10,000,000*l.* since 1895, thus showing that this country, though possessing only a population of about 3,000,000, is not to be despised as a market. Of this total amount of imports, the United Kingdom only supplied the small proportion of 2,257,000*l.*, or about 4·8 per cent., while Germany's share amounted to 13,812,000*l.*, or nearly 30 per cent. Thus, while Great Britain is Switzerland's *second* best customer, taking nearly 7,000,000*l.* worth of goods per annum, or her best customer, if *manufactures* only are considered, she has to content herself with the seventh rank amongst the exporters to Switzerland.

In dividing the imports into the three chief divisions of trade, the following proportion in round figures is shown:—

	Value.
	£
(1) Natural produce and articles of food..	13,148,250
(2) Raw materials..	18,338,250
(3) Manufactured goods	15,017,500
Total	46,504,000

(1) *Natural Produce and Articles of Food.*—(Total, 13,148,250*l.*; imports from Great Britain, 1,967,000*l.*):—

	Value.
	£
Articles of food	11,484,220
Cattle	1,488,230
Oils (for food purposes)	142,100
Drugs, &c.	33,700
Total	13,148,250

(2) *Raw Materials.*—The total imports of raw material in 1899 amounted to 18,338,250*l.* (Great Britain supplied 111,000*l.*), being an increase of 2,700,000*l.* on the imports of 1898. The principal items are:—

Articles.	Value.	Showing a rough increase of—
	£	£
Cotton, raw	1,109,000	84,000
Wool, raw	743,000	183,000
Silk, raw..	6,370,000	1,515,000
Flax, hemp, jute, ramie	67,000	15,000
Iron	1,899,000	474,000
Copper and brass	489,000	68,000
Mineral products	3,144,000	337,000
Alimentary products	312,000	12,000
Various oils	249,000	43,000

The above advances show that during the past year there has been a considerable increase of labour in the principal Swiss manufacturing centres, especially in the silk and iron trades.

(3) *Manufactured Goods.*—The total imports of manufactured goods amounted to 15,017,500*l.* (of which Great Britain supplied 178,700*l.*), an increase of 1,282,000*l.* on 1898. The chief articles are:—

Articles.	Value.	Showing a rough increase of—
	£	£
Woollen goods	1,798,000	251,000
Cotton goods	1,469,000	171,000
Silk goods	674,000	62,000
Flax, hemp, jute goods..	425,000	7,000
Iron and wire goods	1,207,000	247,000
Alimentary products	81,600	7,000
Drugs, chemicals, and colouring materials ..	1,359,700	176,000
Manures, &c.	96,800	3,500
Indiarubber	112,400	5,000
Straw and paper goods	352,300	12,000
Ready-made articles of clothing	1,166,400	149,000
Machinery and vehicles	1,658,800	129,000
Pottery, china goods, and glassware	503,200	27,000
Scientific instruments, hardware, writing and drawing materials, watches and clocks, musical instruments	1,311,000	35,000

The following table shows the principal *decreases* in British imports into Switzerland during the last three years:— Decrease in British imports.

	Value.		
	1897.	1898.	1899.
	£	£	£
Leather and shoe goods	78,000	75,000	69,600
Flax, hemp, jute, &c.	89,000	97,000	79,000
Machinery and vehicles	136,000	113,000	102,000
Wooden goods	4,300	6,300	5,700
Paper and paper goods	12,000	13,000	11,700
Agricultural products	2,300	4,400	2,500
Oils, soaps, and fats	33,700	29,900	12,800
Total	355,300	338,600	283,300

So that 1899 shows a decline of 20 per cent. on the figures of 1897.

Notes on the Import Trade of Switzerland.

The total imports of wool and woollen goods in 1899 amounted to 2,540,572*l.* (raw, 742,722*l.*; manufactured, 1,797,850*l.*), of which Great Britain supplied 345,060*l.*, 19 per cent. of this amount being for manufactured goods. Wool and woollen goods.

British imports show an *increase* of 47,757*l.* on those of 1898, being principally in worsted yarns (11,400*l.*), yarn on bobbins (5,500*l.*), heavy textures (21,000*l.*), light textures (14,000*l.*). On the other hand, there was a decrease in the imports of carpets (4,300*l.*); as the total value imported during the year amounted

to 125,000*l.*, it is evident that there is more trade to be done by British manufacturers in this article.

The imports of raw wool into Switzerland from neighbouring countries, with the exception of Italy, showed an increase. On the other hand, 374,200 kilos. less were imported from La Plata and Australia, so that the total imports amounted to 265,000 kilos. *less* than in 1898. The purchase value, however, increased by 120,000*l.*, the average price being 10*l.* 15*s.* per 100 kilos., against 7*l.* 12*s.* 9*d.* in 1898. Germany and Belgium considerably increased their imports.

The imports of woollen yarn amounted to 102,800 kilos., being an increase of 13 per cent. The prices for worsted yarn increased by 15 to 32 per cent., and for carded yarn 6 to 18 per cent. The imports of raw and unfinished carded and worsted yarns increased by 160,300 kilos., or about 5·18 per cent., the supplies coming principally from Germany.

Cotton and cotton goods.

The total imports of cotton and cotton goods were 2,577,857*l.* (raw and waste, 1,108,774*l.*; manufactured, 1,469,083*l.*), of which Great Britain supplied 795,314*l.*, or about 54 per cent. of the manufactured goods. British imports show an *increase* of 100,000*l.* on 1898, the principal items being yarns (50,000*l.*), raw textures (38,000*l.*), bleached and dyed textures (9,500*l.*), oilcloth and linoleum (7,650*l.*), lace goods (1,900*l.*), various (2,550*l.*), while there was a *decrease* in tulle (2,400*l.*), dyed and velvety textures (4,800*l.*), cotton waste (1,500*l.*), various (900*l.*).

The year 1899 proved to be the most prosperous which the Swiss cotton industry has enjoyed for a long time past. Cotton yarns show a large increase in the imports from Great Britain (1898, 117,657*l.*; 1899, 167,826*l.*). This increase is explained by the heavy demand for superior embroidery yarns, which increased in a short space of time to such an extent that the Swiss spinning and threading industries were not able to cope with it. It is hardly to be expected that this increase in the import of yarns from Great Britain will be maintained, as several new factories have been started in Switzerland, and some of those already existing have been enlarged.

The imports of plain tulle from England showed a decrease, but on the other hand British imports in raw textures showed a considerable increase, as also coloured, printed, and especially fancy-woven textures.

Mineral produce

The total imports of minerals in 1899 were 3,212,843*l.*, of which 30,812*l.* came from Great Britain, the chief items being coal and coke. There was a small increase in calcined gypsum and tar oils from England.

Iron, iron-ware, and wire goods.

The total imports of iron goods in 1899 were 3,106,200*l.* (of which Great Britain contributed 433,300*l.*, an increase of 84,500*l.* on 1898). The following items of British imports show an increase:—Sheet metal (41,629*l.*), rails and iron bars, small (26,771*l.*), pig-iron (12,166*l.*), coarse cast-iron (5,914*l.*), iron goods, &c. (4,910*l.*), drawn wire, tinned and nickelled (2,633*l.*). British imports decreased in the following items:—Cast-iron, other kinds

(3,186*l.*), rails and iron bars, large (2,471*l.*), polished and painted iron goods (1,748*l.*), coarse drawn wire (1,174*l.*), rough piping (971*l.*).

It is strange that in 1899 Great Britain did not supply any cast-iron ware, of which goods to the value of 117,000*l.* were imported from other countries. In previous years British manufacturers have had a certain share of this business. Cutlery also appears to have been neglected by British exporters, their trade in 1899 being only 560*l.* out of a total import of 36,000*l.*

The foundries throughout Switzerland were fully occupied the whole year and their yielding capacity put to a strong test.

The total quantity of raw iron imported in 1899 amounted to 99,922 tons, of which Germany and France supplied the greater portion (72,188 tons against 53,616 tons in 1898). This increased import from these two countries is attributed not only to the favourable quotations, but also to superiority in quality.

The following table shows the proportion of imports from each country :—

	Tons of 1,000 Kilos.					
	Germany.	France.	Belgium.	Great Britain.	Other Countries.	Total.
Rails, bar-iron, sheet-iron, coarse	81,319	9,606	1,374	93	629	93,021
Rails, superior forged iron ...	19,547	2,466	530	1,846	2,300	26,689
Rolled wire (5 to 11 mm.) ...	4,691	234	...	...	18	4,943
Sheet-iron, lead and zinc-plated	8,532	513	3,172	8,442	39	20,698
Coarse cast-iron ware, rough cast tubes	5,599	6,307	572	22	117	12,617
Other cast-iron ware	2,838	838	162	209	890	4,937
Rough drawn tubes	6,864	130	30	53	4,027	11,104
Total	129,390	20,094	5,840	10,665	8,020	174,009
Or per cent.	74·36	11·55	3·35	6·13	4·61	...

Leather and leather goods.

The total imports of leather goods in 1899 were 1,039,900*l.* (of which Great Britain supplied 69,600*l.*, a decrease of 5,790*l.* on 1898). The imports from Great Britain showed a small increase in the following items:—Unfinished shoe goods (571*l.*), lastings for boots and shoes (572*l.*), leather gloves (520*l.*), other leather goods (136*l.*); on the other hand indiarubber shoes decreased (3,460*l.*), leather for soles (1,895*l.*), leather for harness goods, straps, &c. (1,388*l.*), superior boots and shoes (576*l.*), and other leather goods (269*l.*).

The supply of superior boots and shoes and other leather goods from England has during the past year considerably diminished, although the general imports from other countries amounted to 200,000*l.*

The continued decline in the import of indiarubber shoes from England corresponds with the decrease in the general trade. In 1897 the imports into Switzerland were 31,000*l.*, of which Great Britain supplied 17,000*l.*, and in 1899 the imports declined to 19,000*l.*, of which Great Britain supplied 7,000*l.*

Great Britain and British colonies proved Switzerland's best

purchaser for boots and shoes of superior quality, the exports to England, India, and Australia amounting in 1899 to 186,000*l.*

Driving bands, on which the duty is comparatively low (16*s.* per 100 kilos.), were imported in considerable quantities, principally from German, British, Belgian, and French firms; the opening of new factories in various branches of industry led to an increased demand in these goods.

The condition of the tanning trade in 1899 was even more unsatisfactory in Switzerland than in other countries. Owing to the relatively low scale of duties, large quantities of foreign leather were imported, while the high duties imposed by the neighbouring countries excluded Switzerland from exporting to any appreciable extent.

Flax, hemp, jute, and ramie.

British imports decreased in packing canvas of linen, hemp, and ramie by 5,100*l.*, jute canvas by 11,100*l.*, superior linen textures by 1,500*l.*, sundry articles by 1,600*l.* There was a small increase in jute and flax yarns.

A considerable rise occurred in prices for raw material, especially for flax, which influenced the value of manufactured articles, the average price of raw stuffs being, in 1899, 4*l.*, as against 3*l.* 7*s.* 5*d.* in 1898. This rise, however, has a more important effect on the present year's trade than on that of last year. At the same time the quantity imported rose from 1,561,300 to 1,671,400 kilos.

The total import of yarns (1,379,300 kilos.) was 37,000 kilos. more than in 1898, with a rise in the value of 4 to 5 per cent. The general import of packing canvas decreased by 572,900 kilos., or nearly 25 per cent. Other textures showed a slight increase.

Alimentary products.

The total imports of articles of food in 1899 amounted to 11,878,319*l.*, but for the purposes of comparison only those articles have been enumerated in which Great Britain has a share of the imports.

There is a good demand for fresh fish which is admitted free of duty, the average price being about 1*s.* 4*d.* per kilo. In 1899, 1,331,500 kilos. were imported, of which Great Britain supplied 85,000 kilos.

The consumption of tea in Switzerland makes but slight progress. Notwithstanding that the year 1899 was one of the best tourist seasons, the value of imports of tea declined from 46,000*l.* in 1898 to 43,000*l.* in 1899. Indian tea showed an increase of 1,000*l.* (total import 4,300*l.*), while China teas decreased 4,000*l.* (total import 37,000*l.*).

Articles of clothing.

In 1899 clothing to the value of 1,166,422*l.* was imported, of which Great Britain supplied 35,894*l.* or only 3·2 per cent., while Germany supplied about 63 per cent. of the total quantity imported. The chief items of import were: ready-made woollen goods (total 459,700*l.*), ready-made cotton goods (287,600*l.*), ready-made linen goods (93,300*l.*).

Machinery and vehicles.

The total import of machinery and vehicles from all countries amounted to 1,658,800*l.* (of which Great Britain supplied 102,000*l.* being a decrease of 11,500*l.* on her imports of 1898). The dec

is striking, as the total Swiss imports of machinery, &c., increased in 1899 by 130,000*l.*

The following British goods show a material *decrease* in the quantity imported: various machinery (not described), 11,000*l.*; parts of machinery, coarse, 2,000*l.*; bicycles, 3,700*l.*; spinning and throwing machines, 1,100*l.*

Of British imports there was an increase in sewing machines (4,700*l.*), looms and weaving machinery, parts of fine machinery and driving bands.

Trade in general in this branch of industry was very brisk, and necessitated increased imports of raw iron, notably for iron constructions. The principal supplies of raw iron were obtained from Germany, France and England. Iron goods, finished and unfinished, also show a large increase.

The price per 100 kilos. for raw iron rose to 9 fr. 82 c., against 9 fr. 4 c. in 1898.

The demand for machinery in Switzerland was good, neither the general scarcity of money nor the war having any material effect upon the trade, and was mainly produced by continued progress in the science of electricity. The increase was principally for machines (not described) and finished parts of machinery, also rough parts of machinery, parts of boilers, railway plant and mill machinery, iron constructions and steam boilers. Owing to the activity in the textile industry there was also an increased sale for weaving and throwing machines.

Bicycles.

Compared with former years the increase in the import of bicycles was small (total quantity, 15,730, or 703 more than in 1898). The German cycle-makers were successful in securing a large portion of the trade, formerly in the hands of their French and English, as well as American competitors.

Although there was a rise in the price of raw material, the average price for cycles remained unaltered, the reason for this being that the competition is becoming stronger year by year, so that notwithstanding the rise in raw material, manufacturers have not increased their prices to any extent.

Machines for electricity.

The Swiss imports last year in machines for electricity amounted to 100,000*l.*, of which Great Britain supplied only 2,000*l.* Business in this branch was very brisk throughout the year and has continued so during 1900; prices advanced about 10 per cent., although the increased value of raw material would have justified a higher rate.

The increased demand for Swiss electrical machines was mainly from France, Russia and Spain.

Gold, silver, and plated goods.

There was no importation of gold or silver metal from Great Britain in 1899 (in 1898 Great Britain supplied gold to the value of 13,832*l.*, and silver to the value of 788*l.*), so that British imports show a nominal decrease of 14,600*l.* on the returns of 1898. Platinum, rolled gold and silver decreased by 600*l.*

There was a large increase in the import of jewellery (303,500*l.*), which was supplied almost exclusively by Germany.

Pottery and china.

Out of a total import of 44,000*l.* for porcelain and china, Great

Britain only supplied goods to the value of 564*l.*, and of the imports of superior pottery (59,800*l.*), only 3,000*l.* For both of these classes of goods there is a fair demand for superior ware.

Wood and wooden goods.

The principal item of increased imports of manufactured wooden goods was for furniture, the total value being 176,000*l.*, of which 37,000*l.* was for carved and stuffed furniture.

Paper and paper goods.

The total imports of paper, &c., amounted in 1899 to 355,575*l.*, of which Great Britain supplied 11,776*l.*, being a decrease of 1,522*l.* The imports of coloured paper and paperhangings were 800*l.*; labels, envelopes, &c., 376*l.*; and bookbinding materials, &c., 370*l.* *less* than in 1898. Owing to the increased imports from other countries the prices materially decreased last year. The principal imports came from Germany, France and Great Britain, for the most part of superior quality. There was no demand for cheap paper goods from abroad, the prices in Switzerland having been considerably reduced by over-production at home.

Indiarubber and gutta-percha.

The total imports of indiarubber and gutta-percha amounted in 1899 to 118,933*l.* (of which Great Britain supplied 28,400*l.*), the principal items being for tubes and piping (30,000*l.*), of which Great Britain only supplied 1,000*l.*; indiarubber threads (24,000*l.*), Great Britain supplying 15,000*l.*

Notwithstanding the slackness in the cycle trade during 1899 there was a brisk demand for superior tyres.

Agricultural products.

The imports of agricultural products from Great Britain were upwards of 2,000*l.* less than in 1898, the decrease being in various kinds of seeds.

Oils, soaps and fats.

The total imports of oils, soaps, and fats amounted in 1899 to 437,600*l.*, of which Great Britain supplied 12,876*l.* (only 3 per cent. of the total), this being a material *decrease* on British imports of 1898, which amounted to 29,906*l.* Of this decrease 15,000*l.* was in soaps; the main cause of the reduced imports arises from the fact that one of the largest English soap firms established a factory in Switzerland in the autumn of 1898. Olive soaps for industrial purposes, which were formerly largely imported, are now made in Switzerland, and Swiss consumers are beginning to recognise that their home producers can fully meet the demand.

The following goods showed a decrease in 1899:—Ordinary soap (9,681*l.*), perfumed soap (809*l.*), oils for trade purposes (5,352*l.*), linseed oil in barrel (714*l.*), tallow (530*l.*), various (338*l.*).

Cod liver oil was imported from Great Britain to the value of 394*l.*

The Swiss watch trade.

As is well known, the watch industry forms one of the principal features of Swiss commerce. It is worthy of note that not only is Switzerland the largest manufacturer of watches in the world, but in 1899 she considerably exceeded all her previous outputs. The following table will show at a glance the quantity of watches exported, from which it will be seen that the United Kingdom takes more than 20 per cent. of the whole manufacture:—

TABLE showing Total Value of Watches Exported.

	To Great Britain.		To all Countries.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Nickel watches.. ..	718,768	206,320	2,366,426	812,800
Silver watches.. ..	643,606	309,760	3,086,770	1,515,240
Gold watches	158,998	297,200	800,258	1,622,920
Chronographs and repeaters	2,358	12,640	6,769	52,160
Total	1,523,730	825,920	6,260,223	4,003,120

Swiss Trade with India, Australia, &c.

British India. The following articles were imported into Switzerland from India:—Rice, 69,000*l.*; raw coffee, 34,300*l.*; raw cotton, 7,400*l.*; tin in bars, &c., 30,200*l.*; indiarubber and gutta-percha, 3,000*l.*; catechu, 13,900*l.*; spices, 8,000*l.*; tea, 4,300*l.*; cocoa, 6,400*l.*; oil seeds and oil fruits, 5,200*l.*; and precious stones, 9,000*l.*

Coffee showed a decrease of 8,500*l.* in the value of the imports; this is accounted for by the reduction in the average price by 14 per cent., and also by a decreased import of 33,300 kilos.

The importation of raw cotton was exactly one-half of that of 1898; on the other hand, the average price increased by 15 fr., so that the difference in the value of the imports was reduced to 4,960*l.*

The supply of tin was 143,500 kilos., or 37 per cent. less than in 1898, but as the price rose by 64 per cent. the value of the imports shows an increase of 960*l.*

Australia. The exceptionally large increase in the imports from Australia, 166,000*l.*, is partly due to the rise in raw wool, the average value being 9*l.* 12*s.*, as against 6*l.* 12*s.* in 1898, so that the quantity imported (277,200 kilos. less than in 1898) produced an increased value of 74,000*l.* Wheat imports increased to 11,240,700 kilos. at a value of 88,800*l.* The following articles were imported from Australia into Switzerland for the first time:—Tallow, 3,880*l.*; fat oils in barrels, 880*l.*; and raw copper, 1,640*l.* The quantity of tin imported declined from 77,100 to 30,000 kilos.

The Swiss exports to Australia comprised the following articles:—Shoe goods, 7,800*l.*; watches, 8,400*l.*; cotton goods, 28,000*l.*; silk and half-silk ribbons, 17,500*l.*; straw goods, 600*l.*; woollen goods, 7,100*l.*; articles of food, 59,700*l.*; and various, 600*l.*

Canada. The total Swiss imports from Canada amounted to 112,000*l.*, consisting chiefly of articles of food. Switzerland exported goods to Canada to the value of 162,000*l.*

General remarks. The most striking feature which presents itself on a careful examination of the foregoing remarks as well as of the annexed

statistical tables, is the one-sided character of the trade between Great Britain and Switzerland, for while the latter is year by year materially developing her markets, not only in Great Britain, but in British colonies, the returns of British imports into Switzerland remain practically stationary.

In 1899 the total Swiss exports to Great Britain amounted in round figures to 6,637,700*l.*, while the total imports from Great Britain to this country were only 2,257,000*l.*, the latter being therefore only 34 per cent. of the former. But this one-sided feature is especially noticeable in the case of *manufactured goods*. In 1899 Swiss exports of manufactured goods to Great Britain amounted to 5,900,000*l.*, while the latter only exported to Switzerland 1,655,000*l.*, so that British exports were 4,245,000*l.* (or 72 per cent.) less than the Swiss exports of manufactured goods.

The annexed tables show, firstly: A comparison between the total imports into Switzerland from all countries, and the imports from Great Britain only, together with the scale of duty levied upon each article of import; secondly, the principal countries from which the imports into Switzerland were received in 1899, classified under the various descriptions of goods, and sub-divided into raw materials and manufactured articles.

This is the first attempt to obtain a real insight into the nature of Anglo-Swiss trade as suggested in the report on "British trade with Switzerland," published by the Foreign Office in August, 1899 (No. 509, Miscellaneous Series), and should be of use to British traders by enabling them to make themselves acquainted with the demand which exists in Switzerland for certain goods, as well as the country of production.

Although the disparity in the state of Anglo-Swiss trade above referred to is much to be regretted, it must be admitted that there is little prospect of any decided improvement being brought about in the immediate future, for while Switzerland has been carefully and steadily laying the foundation of her trade with Great Britain (since 1893 her exports to that country have increased by nearly 40 per cent.), the latter has made no serious effort to develop her trade with Switzerland.

Customs duties in Switzerland.

The duties levied on goods imported into Switzerland—mainly on manufactured goods—no doubt form a certain obstacle to the importation of British goods, but the Swiss customs tariff is purely a fiscal one, this being the principal source from which the Federal Government derives its revenue, as there is no direct taxation for Federal purposes. The duties levied are also, all round, lower than those imposed by the principal Continental countries, and as Great Britain comes under the most-favoured-nation clause, British manufacturers, generally speaking, have not to pay any higher scale of duties than their foreign competitors for Swiss trade.

In order to enable British manufacturers to become acquainted with the scale of duties imposed upon the various goods imported into Switzerland, a special column has been added to the accom-

panying set of tables, giving the rate of duties as fixed by the Swiss Customs on every article of import. There are a few exceptions, such as raw metals, fresh fish, fruit and vegetables, hay and straw, &c., which are admitted duty free. The duties are charged upon the *gross* weights, inclusive of packages.

Explanation of tables.

As a further assistance, the net weights of the imports from all countries, not including package, as well as the net weights of the imports from Great Britain have been given, so that in most cases manufacturers, by deducting the weight and value of the British imports from the total weight and value given of any particular import, will be able to form an idea of the average value at which the goods imported by their foreign competitors are estimated. Where the quantities (number of pieces) have been stated in the tables published by the Swiss Customs, these have been given instead of the weights. It should be pointed out that these values are not the values declared by importers, but have been fixed by a "Valuation Commission" nominated by the Federal Customs Department and include the freight and insurance charges as far as the Swiss frontier, *but are exclusive of the Swiss duty.*

On reference to the tables of Swiss imports giving the principal countries from which the imports are derived it will be seen that Germany, France and Italy come first in the order named. This is only natural as these countries are frontier countries, and have, therefore, greater facilities for disposing of their goods in Switzerland in consequence of the expenses for freight being lower than from other countries, and the time occupied in transit considerably less.

Commercial travellers in Switzerland.

But this large trade between Switzerland and these countries —especially Germany and France—is also due to the fact that Switzerland is annually visited by a large number of commercial travellers. In 1899 no less than 3,828 commercial travellers, representing German firms, obtained the necessary permit from the Federal authorities to travel in Switzerland, while French manufacturers sent 1,176 travellers, making a total of 5,000 commercial representatives from these two countries alone.

The custom-house returns reveal an interesting fact, showing the attention which German manufacturers devote to cultivating their trade with Switzerland. In 1899 the samples brought into Switzerland by German commercial travellers weighed 211 *tons*, while British samples only amounted to 35 cwts.

Many of these travellers visit Switzerland three or four times a year, but they do not limit themselves to these periodical visits; they find out the special requirements of their customers, and take home reports on the classes of goods which are in demand in each part of Switzerland. British traders, on the other hand, contented themselves with sending 28 travellers to Switzerland (against 49 in 1898), and so long as they do not attempt to make their goods known, their trade with this country will remain in this unsatisfactory state. Her Majesty's Consuls have repeatedly pointed out the uselessness of British firms giving their quota-

tions in English weights, measures and currency, when seeking orders on the Continent, and this advice cannot be too frequently repeated.

Price lists in foreign languages and currency.

In order to meet with any fair amount of success, traders should issue their price lists in the German or French language, and weights and measures should be given in kilos. and metres respectively, and prices quoted in francs.

Many British manufacturers state that they have sent over travellers, but have met with little success, and ultimately discontinued doing so, finding it an unprofitable experiment. But this somewhat complicated question has been fully dealt with in the report of 1899 (No. 509 Miscellaneous Series), to which reference has already been made. Detailed proposals for improving British trade with Switzerland were also given in that report, and need not, therefore, be repeated here.

Business to be done through local agents.

There is, however, another way of opening up trade with Switzerland, namely, through the local business agents. An agent of Swiss nationality knows how to approach his fellow countrymen, and if he is supplied with price lists in German or French, and in foreign currency, he will have a better chance of doing business than an English traveller who is ignorant of the language. One of the principal agents here recently admitted to me that the Swiss representatives were glad to take up agencies of good British firms, as experience had shown them that the agency was not taken away from them as soon as they had worked up a good business connection, in order that it might be worked direct, and thus save expense.

How services of British commercial agents may be employed for increasing British trade.

Some service can undoubtedly be rendered in this respect to traders at home by the commercial agents recently appointed by the Foreign Office, as, living in the countries to which they are assigned, they come in touch with those men who are most suitable to act as representatives of British firms.

Manufacturers and traders at home desirous of doing business through local agents could send their conditions of agency, as well as samples, to the British Commercial Agent in Zürich, who would then endeavour to find a suitable local representative, and, if desired, open preliminary negotiations with him on behalf of the firm, without, of course, accepting any responsibility for selection of the agents in question or otherwise. This service would come under the category of inquiries involving reports as to individuals, for which the fees vary from 1*l.* 1*s.* to 5*l.* 5*s.*, according to the extent of the inquiry. The British Commercial Agent for Switzerland could also arrange for the translation of price lists or catalogues by capable persons, under his direct supervision, on behalf of British firms who are desirous of increasing their Continental trade.

In conclusion, it should be stated that the late period of the year at which this report has been issued is due to the fact that the Swiss custom-house returns, upon which the statistics are based, were not issued until the middle of September.

TABLES showing Principal Countries from which Swiss Imports were received in 1899.

Table 1.—WOOL AND WOOLLEN GOODS.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	5,588	339,472	345,060
Germany	140,672	1,060,982	1,201,654
France	146,654	277,461	424,115
Austria-Hungary	23,663	21,876	45,539
Italy	20,952	15,753	36,705
La Plata	19,303	..	19,303
Australia	295,517	..	295,517
Belgium..	86,578	77,046	163,624
Other countries	3,795	5,260	9,055
Total	742,722	1,797,850	2,540,572

Table 2.—COTTON AND COTTON GOODS.

Imported from—	Raw Cotton and Cotton Waste.	Manufactured Articles.	Total.
	£	£	£
Great Britain	4,644	790,670	795,314
Germany	12,502	481,364	493,866
Austria-Hungary	5,997	12,737	18,734
France	4,835	101,133	105,968
Italy	4,735	44,107	48,842
Belgium..	..	37,926	37,926
Egypt	615,494	..	615,494
British India	7,448	120	7,568
United States	452,611	..	452,611
Other countries	508	1,026	1,534
Total	1,108,774	1,469,083	2,577,857

Table 3.—SILK AND SILK GOODS.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	9,923	24,334	34,257
Germany	50,764	297,000	347,764
Austria-Hungary	11,583	7,886	19,469
France	837,631	269,624	1,107,255
Italy	4,432,753	40,159	4,472,912
Spain	6,403	8	6,411
European Turkey	6,966	436	7,402
Asiatic Turkey	21,015	..	21,015
Japan	521,689	33,019	554,708
China	469,101	833	469,934
Other countries	1,713	1,282	2,995
Total	6,369,541	674,581	7,044,122

Table 4.—Mineral Produce.

Imported from—	Value.
	£
Great Britain	30,812
Germany	1,851,174
Austria-Hungary	42,030
France	564,879
Italy..	44,789
Belgium	222,631
Russia	81,658
Sweden and Norway	896
Bulgaria	7,927
British India	9,675
China	1,752
United States	353,577
Other countries	1,043
Total	3,212,843*

	£
* Raw products	3,144,358
Manufactured products	68,485
Total	3,212,843

Table 5.—Iron, Iron and Wire Goods.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	404,302	29,026	433,328
Germany	1,138,809	731,707	1,870,516
Austria-Hungary	16,640	17,639	34,279
France	226,141	268,538	494,679
Italy	1,727	16,882	18,609
Sweden and Norway	37,571	2,304	39,875
United States	6,322	108,485	114,807
Belgium..	67,407	32,594	100,001
Spain	..	131	131
Total	1,898,919	1,207,306	3,106,225

Table 6.—Copper and Brass Goods.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	13,110	3,778	16,888
Germany	219,396	232,692	452,088
Austria-Hungary	2,418	11,376	13,794
France	180,880	29,722	210,602
Italy	844	9,320	10,164
Belgium..	1,432	363	1,795
United States	19,231	1,469	20,700
Australia	1,624	..	1,624
Other countries	320	796	1,116
Total	439,255	289,516	728,771

Table 7.—Leather and Shoe Goods.

Imported from—	Manufactured Articles.
	£
Great Britain	69,659
Germany	515,867
Austria-Hungary	88,583
France	227,875
Italy..	24,115
Belgium	28,688
Russia	4,091
United States	130,811
Holland	547
Other countries	207
Total	1,039,943

Table 8.—Flax, Hemp, Jute, and Ramie.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	1,820	77,213	79,033
Germany	8,278	135,964	144,242
Austria-Hungary	3,496	3,927	7,423
France	3,428	45,338	48,766
Italy	45,576	24,428	70,004
Belgium..	..	137,978	137,978
Holland..	889	104	993
Russia	3,428	24	3,452
Other countries	192	133	325
Total	67,107	425,109	492,216

Table 9.—Alimentary Products.

Imported from—	Value.
	£
Great Britain	49,856
Germany	1,063,069
Austria-Hungary	1,821,846
France	1,765,667
Italy..	1,267,650
Belgium	63,706
Holland	25,243
Russia	2,150,824
Sweden and Norway	5,059
Denmark	3,816
Portugal	3,685
Spain	602,992
Greece	32,896
Bulgaria, Roumania, Servia	228,235
European Turkey	11,955
Egypt	11,064
Algiers, Tunis, &c...	17,683
West Coast of Africa	24,514
East Coast of Africa	4,768
Asiatic Turkey	35 675
British India	128,090
Dutch Indies	206,532
China and Japan	50,568
British North America	112,068
United States	1,044,055
Mexico and Central America	197,440
South America	859,945
Australia	89,418
Total	11,878,319*

	£
* Provisions	11,484,225
Raw articles	312,495
Manufactured articles	81,599
Total	11,878,319

Table 10.—Ready-Made Articles of Apparel.

Imported from—	Manufactured Articles.
	£
Great Britain	35,894
Germany	769,151
Austria-Hungary	33,438
France	266,507
Italy..	34,309
Belgium	24,242
Holland	940
Japan	1,283
Other countries	658
Total	1,166,422

Table 11.—Druggists' Sundries and Chemical Products.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	353	54,130	54,483
Germany	11,113	596,386	607,499
Austria-Hungary	2,002	156,386	158,388
France	4,946	182,557	187,503
Italy	11,010	37,361	48,371
Belgium..	207	36,086	36,293
Holland..	4,312	21,896	26,208
Russia	328	1,607	1,935
Sweden and Norway	33	1,869	1,902
Spain	3,718	2,659	6,377
Bulgaria..	..	9,000	9,000
European Turkey	1,739	103	1,842
Egypt	1,158	20	1,178
West Coast of Africa	4,394	55	4,449
Asiatic Turkey	5,556	253	5,809
British India	4,273	17,629	21,902
Dutch Indies	1,542	5,341	6,883
China	1,580	1,226	2,806
United States	13,643	32,831	46,474
Other countries	955	1,106	2,061
Total	72,862	1,158,501	1,231,363

Table 12.—Machinery and Vehicles.

Imported from—	Manufactured Articles.
	£
Great Britain	102,069
Germany	1,122,356
Austria-Hungary	23,881
France	153,182
Italy..	33,510
Belgium	114,664
Holland	1,803
United States	106,216
Other countries	1,164
Total	1,658,845

Table 13.—Gold, Silver, Plated Goods, and Jewellery.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	1,235	5,468	6,703
Germany	248,948	249,506	498,454
Austria-Hungary	6,278	6,897	13,175
France	1,312,709	75,967	1,388,676
Italy	133,777	15,912	149,689
Belgium..	..	7,286	7,286
Holland..	..	3,741	3,741
United States	188	1,440	1,628
Other countries	..	1,147	1,147
Total	1,703,135	367,364	2,070,499

Table 14.—Aluminium, Zinc, Tin, and Lead Goods.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	26,069	850	26,919
Germany	91,935	45,686	137,621
Austria-Hungary	2,246	2,038	4,284
France	61,104	9,090	70,194
Italy	7,527	1,831	9,358
Belgium..	16,377	342	16,719
Spain	7,771	..	7,771
British India	30,365	..	30,365
Dutch Indies	55,543	..	55,543
Australia	3,720	..	3,720
Other countries	450	..	450
Total	308,107	59,837	362,944

Table 15.—Pottery and China Goods.

Imported from—	Manufactured Articles.
	£
Great Britain	18,123
Germany	158,880
Austria-Hungary	7,447
France	46,102
Italy..	7,583
Belgium	12,823
Holland	2,560
Greece	699
Other countries	603
Total	254,820

Table 16A.—Cattle.

Imported from—	Value.
	£
Great Britain	42,440
Germany	230,884
Austria-Hungary	133,148
France	334,475
Italy	1,112,642
Belgium	19,316
Holland	12,893
United States	9,418
Other countries	344
Total	1,895,560*

	£
* Animals for food purposes	1,488,230
Other animals	407,330
Total	1,895,560

Table 16B.—Animal Products.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	1,474	867	2,341
Germany	160,211	20,008	180,219
Austria-Hungary	36,344	2,684	39,028
France	29,072	6,964	36,036
Italy	30,319	252	30,571
Belgium	1,720	290	2,010
Holland	1,214	40	1,254
Russia	28,887	..	28,887
Sweden and Norway	1,094	..	1,094
Spain	1,748	..	1,748
Greece	3,280	..	3,280
European Turkey	1,628	..	1,628
British India	4,442	..	4,442
Japan	1,480	..	1,480
China	7,329	..	7,329
United States	9,020	..	9,020
Brazil	7,363	..	7,363
Argentina	20,017	..	20,017
Australia	4,650	..	4,650
Other countries	2,707	..	2,707
Total	353,999	31,105	385,104

Table 17.—Wood and Wooden Goods, &c.

Imported from—	Value.
	£
Great Britain	5,709
Germany	428,132
Austria-Hungary	449,421
France	187,618
Italy	47,608
Belgium	3,045
Holland	2,932
Russia	955
Sweden and Norway	1,183
Portugal	477
Spain	10,010
Algiers	614
Japan	940
United States	84,959
Mexico and Central America	2,054
Australia	2,360
Other countries	1,697
Total	1,229,714*

	£
* Raw material	331,017
Manufactured articles	898,697
Total	1,229,714

Table 18A.—Musical Instruments, Art, and Literature.

Imported from—	Natural Curiosities.	Manufactured Articles.	Total.
	£	£	£
Great Britain	1,325	8,242	9,567
Germany	4,380	338,078	342,458
Austria-Hungary	600	15,303	15,903
France	1,108	159,909	161,017
Italy	342	19,074	19,416
Belgium	107	2,111	2,218
Holland	57	3,482	3,539
British India	851	32	883
United States	104	2,932	3,036
Other countries	1,028	811	1,839
Total	9,902	549,974	559,876

Table 18B.—Scientific Instruments and Electrical Apparatus.

Imported from—	Manufactured Articles.
	£
Great Britain	6,251
Germany	129,257
Austria-Hungary	3,843
France	35,916
Italy..	2,892
Belgium	4,448
United States	14,746
Other countries	986
Total	198,339

Table 19.—Paper and Paper Goods.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	..	11,776	11,776
Germany	31,676	224,889	256,565
Austria-Hungary	6,761	27,029	33,790
France	8	40,458	40,466
Italy	..	4,749	4,749
Belgium..	..	4,070	4,070
Holland..	..	932	932
Sweden and Norway	1,171	673	1,844
United States	128	878	1,006
Other countries	231	146	377
Total	39,975	315,600	355,575

Table 20.—Manure, Rags, and Fodder.

Imported from—	Raw.	Manufactured.	Total.
	£	£	£
Great Britain	156	..	156
Germany	179,024	82,150	261,174
France	117,519	7,015	124,534
Italy	54,183	201	54,384
Belgium..	7,805	3,134	10,939
Russia	3,718	..	3,718
United States	1,079	..	1,079
Chile and Peru..	13,794	1,598	15,392
Holland..	..	2,676	2,676
Austria	12,790	98	12,888
Other countries..	223	..	223
Total	390,291	96,872	487,163

Table 21.—Colouring Materials.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	146	16,865	17,011
Germany	9,318	169,854	179,172
Austria-Hungary	961	1,179	2,140
France	6,322	29,637	35,959
Italy	12,013	2,056	14,069
Belgium..	131	7,907	8,038
Holland..	..	3,762	3,762
United States	76	3,009	3,085
Asiatic Turkey	4,777	..	4,777
British India	11,733	..	11,733
China	9,751	..	9,751
Central America	14,516	505	15,021
Other countries	3,124	21	3,145
Total	72,868	234,795	307,663

Table 22.—Indiarubber and Gutta-Percha Goods.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	31	28,367	28,398
Germany	130	62,552	62,682
Austria-Hungary	..	5,582	5,582
France	1,728	9,496	11,224
Italy	..	888	888
Belgium..	..	293	293
West Coast of Africa	448	..	448
East Coast of Africa	442	..	442
United States	..	5,236	5,236
Brazil	572	..	572
British India	3,132	36	3,168
Total	6,483	112,450	118,933

Table 23.—Glassware.

Imported from—	Manufactured Articles.
	£
Great Britain	1,163
Germany	83,496
France	52,503
Austria	13,336
Italy	4,097
Belgium	93,713
Other countries	68
Total	248,376

Table 24.—Agricultural Products.

Imported from—	Raw Stuffs.
	£
Great Britain	2,576
Germany	60,281
Austria-Hungary	25,257
France	131,026
Italy	13,589
Belgium	13,078
Holland	8,620
British India	5,294
United States	4,187
Argentina	1,621
Other countries	3,143
Total	268,622

Table 25.—Oils, Soaps, and Fats.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	10,959	1,917	12,876
Germany	26,252	11,809	38,061
Austria-Hungary	1,008	4,483	5,491
France	58,525	122,732	181,257
Italy	682	44,502	45,184
Belgium	27,673	251	27,924
Holland	47,670	13	47,683
Russia	6,969	..	6,969
Sweden and Norway	2,178	..	2,178
Spain	..	1,928	1,928
West Coast of Africa	12,334	..	12,334
East Coast of Africa ..	1,368	..	1,368
British India	1,087	..	1,087
Japan	1,078	..	1,078
United States	46,426	40	46,466
Australia	4,761	..	4,761
Other countries	419	582	1,001
Total	249,389	188,257*	437,646

* Of this amount 142,087*l.* is for oils for food purposes.

Table 26.—Watches and Clocks.

Imported from—	Manufactured Articles.
	£
Great Britain	2,042
Germany	34,572
Austria-Hungary	649
France	77,175
United States	17,429
Other countries	242
Total	132,109

Table 27.—Straw and Straw Goods.

Imported from—	Raw Material.	Manufactured Articles.	Total.
	£	£	£
Great Britain	..	438	438
Germany	7,032	2,428	9,460
Austria-Hungary	5,926	114	6,040
France	1,270	2,216	3,486
Italy	4,240	12,274	16,514
Algiers, Tunis, &c.	7,531	60	7,591
British India	5,176	93	5,269
East Africa	1,050	..	1,050
Japan	249	8,172	8,421
China	1,336	9,849	11,185
Mexico	11,336	..	11,336
Other countries	708	1,084	1,792
Total	45,854	36,728	82,582

Table 28.—Lamps and Hardware.

Imported from—	Manufactured Articles.
	£
Great Britain	11,438
Germany	200,083
Austria-Hungary	32,420
France	74,755
Italy	9,851
Belgium	1,926
Other countries	2,052
Total	332,525

Table 29.—Toys, Fancy Goods, and Travelling Articles.

Imported from—	Manufactured Articles.
	£
Great Britain	1,403
Germany	47,817
Austria-Hungary	632
France	11,792
Other countries	742
Total	62,386

Table 30.—Writing and Drawing Materials.

Imported from—	Manufactured Articles.
	£
Great Britain	3,276
Germany	21,454
Austria-Hungary	2,089
France	7,077
Belgium	560
United States	638
Other countries	765
Total	35,859

Swiss Imports and Exports during the Years 1897–99.

Imports.

	Value.		
	1897.	1898.	1899.
	£	£	£
Total Swiss imports	41,248,782	42,612,208	46,503,793
Principal imports from—			
1. Germany	12,254,838	12,584,460	13,812,184
2. France	7,696,653	8,157,270	8,568,285
3. Italy	5,993,626	6,232,491	7,653,772
4. United States	2,067,511	2,922,707	2,473,464
5. Austria-Hungary	2,673,936	2,648,775	3,064,030
6. Russia	2,676,609	2,443,946	2,284,894
7. Great Britain	2,161,746	2,038,351	2,257,259

Exports.

	Value.		
	1897.	1898.	1899.
	£	£	£
Total Swiss exports	27,726,922	28,953,050	31,840,556
Principal exports to—			
1. Germany	7,022,665	7,760,526	7,943,234
2. Great Britain	5,842,838	5,928,162	6,637,739
3. France	3,345,940	3,328,762	3,851,503
4. United States	2,889,509	2,949,339	3,667,541
5. Austria-Hungary	1,650,974	1,680,136	1,819,830
6. Italy	1,559,011	1,549,569	1,679,228
7. Russia	978,054	1,224,745	1,266,440

TABLES showing Detailed Comparison between the Imports from all Countries and the Imports from Great Britain into Switzerland in 1899 (with Scale of Custom-House Duties).

SUMMARY of Swiss Imports from all Countries and of Imports from Great Britain in 1899.

Table.	Description.	Imports in 1899 from—	
		All Countries.	Great Britain.
		£	£
1	Wool and woollen goods	2,540,572	345,060
2	Cotton and cotton goods	2,577,857	795,314
3	Silk and silk goods	7,044,122	34,257
4	Mineral produce	3,212,843	30,812
5	Iron, ironware, and wire goods	3,106,225	433,328
6	Copper and brass goods	728,771	16,888
7	Leather and shoe goods	1,039,943	69,659
8	Flax, hemp, jute, ramie, &c.	492,216	79,033
9	Alimentary products	11,878,319	49,856
10	Ready-made articles of clothing	1,166,422	35,894
11	Druggists' sundries and chemicals	1,231,363	54,483
12	Machinery and vehicles	1,658,845	102,069
13	Gold, silver, plated goods, and jewellery	2,070,499	6,703
14	Aluminium, zinc, tin and lead goods	362,944	26,919
15	Pottery and china goods	254,820	18,123
16A	Cattle	1,895,560	42,440
16B	Animal products	385,104	2,341
17	Wood, wooden goods, furniture, and brush goods	1,229,714	5,709
18A	Music, musical instruments, art, and literature	559,876	9,567
18B	Scientific instruments and electrical apparatus	198,339	6,251
19	Paper and paper goods	355,575	11,776
20	Manure, rags, and fodder	487,163	156
21	Colouring materials	307,663	17,011
22	Indiarubber and gutta-percha goods	118,933	28,398
23	Glassware	248,376	1,163
24	Agricultural products	268,622	2,576
25	Oils, soaps, and fats	437,646	12,876
26	Watches and clocks and parts of same	132,109	2,042
27	Straw and straw goods	82,582	438
28	Lamps and hardware	332,625	11,438
29	Toys, fancy goods, and travelling articles	62,386	1,403
30	Writing and drawing materials	35,959	3,276
	Total	46,503,793	2,257,259

IMPORTS into Switzerland in 1899.

Table 1.—WOOL AND WOOLLEN GOODS.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.		
	Weight.	Value.	Weight.	Value.			
	Kilos.	£	Kilos.	£	£	s.	d.
Wool, raw and washed, waste and shoddy	4,453,300	479,249	19,400	3,492	0	0	3
Wool, dyed and combed	1,242,800	263,475	13,100	2,096	0	0	6
Carded yarn, raw, plain	70,500	10,843	13,800	2,622	0	5	0
,, ,, double	3,900	700	800	160	0	6	6
Worsted yarn, raw, double	25,400	6,262	8,900	2,421	0	6	6
,, ,, plain	220,500	61,740	80,300	22,484	0	5	0
Carded yarn, bleached, single or double	106,000	19,239	1,400	350	0	9	8
Worsted yarn, bleached, single or double	117,500	44,342	12,300	4,871	0	9	8
Carded yarn, bleached, double ...	4,800	738	100	19	0	14	5
Worsted ,, ,, ,, ...	33,500	10,996	2,900	1,009	0	14	5
Yarn on bobbins, for retail trade ...	302,000	98,546	49,800	17,330	1	4	0
Carded yarn textures, coarse ...	55,400	10,871	1,500	376	1	0	0
Worsted ,, ,, ...	7,800	2,757	500	188	1	12	0
Heavy textures, bleached, dyed, printed...	1,517,000	451,546	427,000	152,012	2	4	0
Light, textures, bleached, dyed, printed...	1,674,500	711,267	263,900	92,893	3	4	0
Felt cloths	20,200	5,656	700	196	2	16	0
Covers, quilts, unsewn, &c.	105,500	15,192	3,100	446	1	0	0
Other covers, quilts	17,800	4,414	2,700	670	2	8	0
Carpets, coarse, unsewn	18,800	3,223	3,000	510	1	0	0
Other carpets	328,000	124,640	104,000	39,520	2	0	0
Shawls, wraps, &c.	8,700	7,250	700	538	3	0	0
Ribbons	37,700	31,610	100	76	2	12	0
Braids and trimmings	91,000	127,330	300	237	2	12	0
Embroidery and lace goods	8,200	8,445	100	35	4	0	0
Felt stuffs	56,300	14,863	300	79	0	16	6
,, goods, unsewn	15,700	1,758	300	34	0	12	3
,, ,, dyed, unsewn, &c. ...	33,200	23,157	600	396	1	4	0
Cloth lastings	8,900	463	...	...	0	13	0
Total	...	2,540,572	...	345,060	...		

Table 2.—Cotton and Cotton Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Cotton, raw	23,970,700	1,074,861	...	...	0 0 3
,, waste	1,100,900	33,913	154,800	4,644	0 0 3
Yarn—					
Plain, coarse	245,500	13,520	11,200	605	0 5 10
,, superior	156,100	30,818	152,100	30,420	0 5 10
Twisted	727,400	114,573	646,100	103,376	0 7 6
Bleached, single or double... ...	19,000	2,789	1,800	238	0 9 8
Dyed, single	216,800	20,491	2,200	299	0 9 8
,, double	98,500	16,913	30,800	4,928	0 9 8
On bobbins, &c., or double ...	412,500	88,619	116,500	27,960	1 8 0
Cotton wadding...	51,200	3,665	200	12	0 4 0
Plain tulle, raw	356,200	116,121	354,800	115,665	0 3 4
Heavy textures, raw, plain, ...	1,916,800	331,172	1,685,400	303,372	0 8 0
Other textures, raw, plain, light ...	57,500	18,390	56,000	18,144	2 0 0
Bleached textures—					
Heavy	163,200	23,884	38,200	5,501	1 12 0
Light	9,700	2,414	3,800	927	1 16 0
Coloured textures—					
Heavy	83,700	16,070	6,000	1,152	1 12 0
Light	2,500	804	...	...	1 16 0
Dyed textures—					
Heavy	452,500	79,653	103,400	17,371	1 12 0
Light	14,400	3,579	700	175	1 16 0
Printed textures—					
Heavy	395,500	86,824	136,700	30,074	1 12 0
Light	5,100	1,706	2,000	664	1 16 0
Bookbinder's linen	39,000	5,386	17,900	2,434	1 4 0
Fancy woven textures—					
Raw	24,500	3,975	9,800	1,686	1 4 0
Bleached and coloured	420,800	117,453	38,700	10,526	1 16 0
Velvety and broché textures, raw ...	2,100	583	500	144	1 4 0
,, ,, ,, and tulle, raw, bleached, and coloured ...	152,500	81,057	77,900	40,508	1 16 0
Flatstitch and woven lace textures, raw	22,500	8,875	2,800	930	1 4 0
Flatstitch and woven lace textures, bleached and coloured	78,800	34,670	8,100	3,402	1 16 0
Felt cloths	1,100	261	200	48	1 12 0
Covers and quilts, unbleached ...	8,100	1,426	600	106	0 16 0
,, ,, bleached or coloured	83,700	23,783	9,300	2,604	1 12 0
Covers and quilts, with trimmings, &c.	32,200	10,550	2,000	608	2 8 0
Shawls, wraps, &c.	4,300	1,086	1,400	381	2 0 0
Ribbons and trimmings	117,900	53,435	1,500	678	1 16 0
Chainstitch embroidery, curtains ...	4,000	3,949	...	...	4 0 0
Other chainstitch embroidery ...	700	627	...	...	4 0 0
Flatstitch embroidery, trimmings ...	3,600	4,036	100	74	4 0 0
,, ,, on tulle ...	1,000	1,638	...	...	4 0 0
,, ,, for dresses, &c.	1,800	2,485	...	...	4 0 0
Hand embroidery	3,100	10,926	100	368	4 0 0
Lace	41,200	39,478	9,000	8,436	4 0 0
Common oilcloths and oil canvas ...	37,800	3,268	11,400	1,140	0 6 6
Oilcloths for tables, &c.	172,900	23,990	74,000	10,360	1 4 0
Linoleum carpets	1,091,000	61,141	809,900	45,354	0 16 0
Total	...	2,577,857	...	795.314	...

Table 3.—Silk and Silk Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Cocoons	154,400	57,990	...	...	0 0 3
Silk waste	1,313,000	196,232	5,300	509	0 0 3
,, combings	1,106,400	569,423	23,000	8,280	0 0 10
Raw silk	697,400	1,231,454	...	...	0 1 3
Untwisted ferret silk	68,400	43,217	200	124	0 1 3
Twisted ferret silk	54,300	33,646	...	...	0 5 0
Organzine and trame	1,961,200	4,314,441	600	1,134	0 5 0
*Dyed silk	28,500	36,027	...	...	0 13 0
,, ferret silk	3,200	3,018	...	...	0 13 0
,, silk remnants, &c.	15,700	9,704	...	...	0 5 10
Silk, raw, sewing, and embroidery ...	3,300	4,987	...	...	0 5 0
Ferret silk, raw, sewing and embroidery...	7,600	5,203	...	9	0 5 0
Dyed, sewing, embroidery, &c., silk and ferret silk	1,700	2,685	...	16	0 13 0
Silk and ferret silk on bobbins ...	7,900	8,089	2,500	1,824	2 8 0
,, bolting cloth	...	47	...	...	0 13 0
Pure silk textures	109,000	279,978	9,500	17,982	0 13 0
Ferret silk textures	1,200	556	...	...	0 13 0
Half-silk textures	1,077	94,422	5,000	3,132	1 12 0
Shawls and wraps, silk	3,900	9,714	100	307	6 0 0
* ,, ,, half-silk	1,300	1,950	...	...	4 0 0
Ribbons, silk	16,500	34,125	100	185	4 0 0
,, half-silk	44,700	55,492	...	53	2 8 0
*Trimmings, silk	12,900	17,889	...	...	4 0 0
* ,, half-silk	6,000	6,797	..	...	2 8 0
Silk embroidery	1,900	6,339	100	187	7 4 0
* ,, lace	5,300	19,828	..	...	7 4 0
,, goods in connection with precious metals	300	869	...	...	8 0 0
Goods marked with asterisk	...	...	...	515	...
Total	...	7,044,122	...	34,257	...

Table 4.—Mineral Produce.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Quarry stones, gravel, and sand	642,926,700	129,468	...	...	Free
Plaster and limestone	33,127,800	69,410	2,235,100	4,470	Free
Blocks of granite for polishing	7,911,800	20,512	...	...	0 0 3
Pumice stone, cryolite, and emery	1,418,400	30,382	51,800	1,243	0 0 5
Lithographic stones (not described)	276,100	2,430	...	...	0 0 5
*Asbestos	80,100	1,923	...	...	0 1 3
*Other asbestos goods	82,600	7,269	...	...	0 8 0
Slates for roofing, &c.	3,679,100	15,180	...	...	0 0 10
Millstones and porcelain cylinders	507,900	8,233	...	...	0 0 5
*Grinding stones, unmounted	1,069,000	2,356	...	...	0 0 5
*Whetstone	65,200	4,955	...	...	0 0 5
*Emery cloth	46 300	3,704	...	...	0 16 0
* ,, paper	103,900	3,325	...	...	0 12 0
*Other emery goods	89,500	2,685	..	...	0 5 0
Lime	6,169,400	4,365	...	...	0 0 2
*Plaster of Paris	19,954,400	25,020	...	...	0 0 2
	216,500	433	...	...	0 1 3
Hydraulic lime	21,618,700	17,295	...	...	0 0 5
*Roman cement	26,003,500	31,204	...	...	0 0 5
Portland cement	15,053,400	25,731	...	...	0 0 7
Other cement	53,300	454	33,800	423	0 0 3
Cement stones, pipes, &c., unfinished ...	1,322,600	1,190	...	...	0 0 6
,, ,, ornamental ...	141,200	488	...	...	0 1 3
*Stonemasonry	9,202,100	64,061	...	...	0 0 3
*Marble and granite slabs, polished	18,100	731	...	...	0 1 3
,, ,, work, polished	332,000	8,632	...	...	0 3 4
Ordinary stonework, polished	116,700	560	...	...	0 2 6
Other stonemasonry	92,300	1,868	...	...	0 3 4
Precious stones, unmounted	1,500	15,266	...	...	1 4 0
Amber, meerschaum, &c., unpolished ...	8,700	1,097	...	...	0 8 0
	Tons.		Tons.		Per ton.
Coal	1,381,165	1,643,455	10,908	19,991	0 0 2
Peat	2,046	2,306	...	...	0 0 2
Coke	129,328	204,622	304	718	0 0 2
Briquettes	305,279	379,144	...	...	0 0 2
	Kilos.		Kilos.		Per 100 kilos.
Asphalt	3,020,200	8,007	...	...	0 0 3
* ,, goods, roofing, &c.	351,900	2,439	...	...	0 1 3
Petroleum, &c.	62,074,100	407,716	...	...	0 1 0
Mineral and tar oils	6,642,400	64,927	293,000	2,344	0 1 0
Goods marked with asterisk	...	...	...	1,613	...
Total	...	3,212,843	...	30,812	...

Table 5.—Iron, Iron and Wire Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty.
	Weight.	Value.	Weight.	Value.	
	Tons.	£	Tons.	£	£ s. d.
Unmanufactured goods—					
Iron ore	10,904	13,142	...	...	Free
					Per ton.
Pig-iron	98,137	392,687	22,750	92,654	0 0 10
	Kilos.		Kilos.		Per 100 kilos.
Manufactured goods—					
Rails, iron bars, sheet metal (large)	93,021,500	719,772	93,300	4,105	0 0 6
,, ,, ,, (small) and coarse rolled wire	26,689,400	306,467	1,845,800	81,215	0 1 5
Rolled wire, ¼-in. to ⅜-in.	4,942,700	37,827	...	...	0 1 0
Sheet iron, under 1/12-in.	7,213,700	81,462	86,600	2,425	0 2 0
,, ,, 1/12-in., tinned ...	13,484,200	307,843	8,355,300	217,238	0 2 6
Coarse drawn wire	789,300	14,224	118,600	4,032	0 3 4
Drawn wire, tinned and nickelled ...	1,229,400	25,604	109,700	2,633	0 3 9
Cast-iron ware, quite coarse... ...	12,616,900	132,520	...	6,607	0 2 0
,, ,, other kinds... ...	4,936,500	117,325	...	...	0 4 2
Rough piping	11,103,400	201,046	52,700	949	0 0 6
Forged iron, rough	6,363,900	128,859	72,200	2,021	0 2 6
Bolts, scythes, and sickles	777,500	22,286	...	318	0 5 9
Various common forged iron goods and tinned pans	5,204,400	213,488	136,800	7,661	0 8 0
Various common forged iron-goods, polished, tinned, and zinc-plated	3,875,800	186,411	106,000	6,784	0 9 9
Superior forged iron goods—					
Polished and painted...	410,900	57,057	11,100	2,109	0 18 0
Enamelled	360,800	39,798	5,500	715	0 18 0
Nickel-plated	142,400	20,066	6,500	1,040	1 0 0
Watchmaking utensils	9,400	4,492	...	...	...
Cutlery	127,300	35,644	2,000	560	1 12 0
Weapons	32,400	42,379	...	262	2 0 0
Gun barrels	11,300	5,664	...	...	0 4 0
Unfinished parts of firearms... ..	1,700	272	...	...	0 8 3
Total	...	3,106,225	...	433,328	...

Table 6.—Copper and Brass Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Unmanufactured goods—					
Copper ore	579,100	34,746	300	18	Free
Manufactured goods—					
Copper and brass in bars	1,093,300	88,347	133,700	10,696	0 0 10
Rolled copper and brass	3,377,300	316,162	25,600	2,396	0 2 6
Wire work, screws, wire with india-rubber	164,600	31,603	4,300	826	0 8 3
Electric cables, and covered wire conductors	1,058,400	156,643	4,500	666	0 8 3
Coppersmiths' and brassfounders' goods	476,500	93,394	11,400	2,234	1 4 0
Imitation leaf, brass, &c.	5,300	1,272	...	...	1 4 0
Gilt, rolled copper, and bronzed goods, gilt or silver copper	12,700	6,604	100	52	2 8 0
Total	...	728,771	...	16,888	...

Table 7.—Leather and Shoe Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Sole leather	1,223,400	144,180	165,700	16,239	0 13 0
Leather for harness goods and straps, calf leather	190,000	45,992	13,400	2,894	0 13 0
Other leather; necks and bellies ...	2,078,600	415,567	206,300	30,945	0 6 6
*Prepared parts of leather	9,900	7,128	...	...	1 8 0
Finished leather goods	111,500	48,211	3,100	1,736	2 8 0
Unfinished shoe goods	77,700	34,646	1,700	571	1 12 0
*Coarse shoe goods	123,900	24,582	...	...	1 12 0
Superior shoe goods	328,300	154,968	9,200	2,944	2 8 0
Silk and satin shoes	5,400	2,068	...	...	4 0 0
Shoe goods in other textures	250,200	63,950	500	50	1 16 0
*Shoe goods without leather soles ...	61,300	7,706	...	...	1 12 0
Indiarubber shoes	86,700	18,667	36,700	7,340	1 12 0
*Felt shoes	22,300	5,832	...	...	1 4 0
Cloth shoes	4,000	884	...	...	1 12 0
Lastings for boots and shoes	21,100	4,642	20,600	4,532	0 13 3
Leather gloves	14,400	61,220	700	1,820	6 0 0
Goods marked with asterisk	...	...	1,500	558	..
Total	...	1,039,943	...	69,659	...

Table 8.—Flax, Hemp, Jute, Ramie, &c.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Flax, hemp, jute, ramie	1,671,400	67,107	47,900	1,820	0 0 3
Hemp yarn, plain, coarse	198,500	8,723	6,900	304	0 1 0
Linen yarn, ramie, plain, coarse ...	12,800	563	3,800	167	0 1 3
Jute yarn, plain coarse	414,200	10,769	205,200	5,335	0 1 3
Fine yarn, plain	457,500	41,206	20,600	2,060	0 5 0
Twisted and bleached yarn	245,300	27,684	18,900	2,230	0 8 0
Dyed yarn...	3,800	494	1,400	182	0 13 0
Yarn on bobbins, for retail trade ...	47,200	12,740	11,300	3,119	1 12 0
Packing canvas of linen, hemp, and ramie	149,400	7,774	113,000	5,876	0 1 8
Packing canvas of jute, &c.	1,596,700	47,901	1,131,300	33,939	0 1 8
Coarse linen textures	189,300	17,825	20,000	1,880	0 9 8
Medium linen textures	165,000	26,424	9,400	1,560	1 0 0
Fine and finished linen textures ...	497,000	169,112	47,500	19,000	1 14 0
Coarse jute textures	10,600	763	} 800	90 {	0 9 8
Medium jute textures	1,100	114			1 0 0
Fine and finished jute textures ...	11,500	3,036			1 14 0
Tulle, plain or broché	...	...	...	...	2 8 0
Ribbons and trimmings...	19,300	9,264	200	96	2 0 0
Embroidery and lace	6,600	10,474	100	93	6 0 0
Towing ropes	130,400	8,085	100	6	0 5 10
Other ropework	128,700	12,613	800	78	0 19 0
Girths, hose, and sacks...	61,400	7,368	5,300	636	0 16 0
Coarse matting and jute covers, plain	300	17	...	...	0 9 8
Coarse matting and jute covers, coloured...	4,300	257	...	...	0 16 0
Woven carpets	18,200	1,893	5,400	562	2 0 0
Total	...	492,216	...	79,033	...

Table 9.—Alimentary Products.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Butter and margarine	1,610,600	66,421	64,700	2,459	0 8 0
Chocolate	7,200	780	300	34	1 4 0
Candied fruits	80,100	5,530	24,900	1,494	1 12 0
Sugar goods	192,500	14,461	95,600	6,883	1 12 0
Superior comestibles	75,300	9,064	12,900	1,290	2 0 0
Fish, fresh	1,331,200	87,423	85,000	13,660	Free
,, preserved	1,158,900	64,273	115,200	3,138	...*
Smoked meat and bacon	2,755,200	128,597	51,600	4,541	0 5 0
Extracts of meat	25,800	11,376	800	576	1 12 0
Potted vegetables	334,500	8,618	12,600	302	1 4 0
Confectionery without sugar ...	37,900	2,274	8,100	486	0 12 2
Cheese	981,500	55,353	200	15	0 3 4
Soup extracts	57,700	3,636	10,400	707	0 16 0
Farinaceous food (children's) ...	6,600	475	4,100	295	0 16 0
Mustard	40,100	2,219	9,400	752	0 16 0
Mustard, in seeds	94,600	2,000	...	...	0 1 3
Tobacco, snuff	51,900	9,344	7,100	2,130	3 0 0
Cigars and cigarettes...	164,800	71,321	3,600	1,656	6 0 0
Molasses and syrups	2,003,900	15,989	272,000	3,264	0 2 6
Sugar, raw, crystallised, &c. ...	44,139,000	552,120	60,600	848	0 6 0
,, in loaves and blocks... ...	14,383,200	187,866	...	...	0 7 6
Lump and powdered sugar	10,155,800	142,502	...	...	0 8 4
Brandy, cognac, and rum, in bottles	35,600	4,471	6,900	566	1 4 0
	Gallons.				
Brandy, cognac, and rum, in barrels	99,066	32,915	10,846	3,550	0 0 2
Beer in barrels	1,805,452	88,634	3,464	188	0 3 4
	Kilos.				
Chocolate paste	45,600	8,203			1 4 0
Vinegar in barrels	68,200	667			0 8 0
,, bottles	9,300	294			1 4 0
Poultry	2,477,200	215,243			0 5 0
Game	506,600	24,022			0 8 0
Sausages	789,300	81,143			0 9 8
Fresh fruit	13,630,500	167,127			Free
Fruit essences	77,500	2,384			0 16 0
Tinned peas	881,900	8,756	...	1,082	0 0 3
Barley and groats	18,425,300	164,324			0 1 8
Bread	281,200	3,824			0 1 8
Roasted coffee	200,600	16,048			0 4 0
Tapioca and sago	333,700	8,768			0 5 10
Table salt	700	10			0 8 0
Shell fish	70,400	4,972			1 4 0
Beer in bottles	23,900	282			0 8 0
Liqueurs	91,100	9,686			1 4 0
Total	...	2,283,460	...	49,856	...

* In barrels up to 5 kilos., 12*s.* 9*d.*; over 5 kilos. 10*d.*

Note.—The total imports from all countries of alimentary products, amounted to 11,878,819*l.*, but only those articles are given which are imported from Great Britain.

Table 10.—Ready-Made Articles of Apparel.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Cotton underclothing	81,800	36,586	1,300	806	2 12 0
,, corsets	116,700	51,326	2,100	1,071	2 12 0
,, hosiery	229,500	71,838	2,600	1,050	2 8 0
,, umbrellas	21,200	3,744	...	...	1 12 0
Other ready-made cotton goods ...	312,500	124,172	6,600	2,640	2 12 0
Linen underclothing	72,800	54,038	2,600	2,200	2 16 0
,, hosiery	500	300	...	...	3 4 0
Other ready-made linen goods ...	66,300	38,987	6,000	3,300	2 16 0
Silk hosiery	5,200	12,571	200	580	10 0 0
,, ties	36,400	37,805	400	556	7 0 0
Other ready-made silk goods... ...	33,300	59,095	900	1,736	7 0 0
Woollen hosiery...	249,700	118,488	8,400	6,048	3 0 0
Other ready-made woollen goods ...	695,700	341,282	13,000	9,360	4 4 0
Lace dresses, embroidered dresses ...	400	1,398	...	18	12 0 0
Fur goods	25,100	31,862	1,500	1,804	6 0 0
Millinery	37,000	51,574	...	212	8 0 0
Untrimmed felt hats	13,600	7,949	...	50	3 0 0
,, straw hats...	21,900	15,772	...	38	4 0 0
Trimmed felt hats	62,100	48,982	2,800	2,333	4 16 0
,, straw hats	17,400	21,103	500	528	8 0 0
Bedding, prepared	9,800	4,516	1,500	1,050	2 8 0
Various umbrellas	600	166	...	...	2 8 0
Half-silk umbrellas	18,800	7,378	...	56	2 8 0
Silk umbrellas	3,200	2,666	...	84	4 0 0
Umbrella frames and sticks	173,500	15,468	...	234	0 6 6
Used garments and linen	46,000	4,572	...	140	0 1 3
Carriage covers in sail cloth	23,200	2,784	...	...	0 16 0
Total	...	1,166,422	...	35,894	...

Table 11.—Druggists' Sundries and Chemical Products.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Druggists' sundries—					
Pharmaceutical raw material (whole)	661,200	21,528	26,800	915	0 2 6
" " (small)	40,500	1,963			0 6 6
Drugs	437,200	43,720	22,100	2,210	0 8 0
Iodoform	700	1,040	...	...	0 8 0
Mineral waters	...	33,726	...	...	0 1 3
Alkaloids	15,600	21,384	300	420	0 6 6
Extract of quinine, refined camphor	66,100	7,932	3,800	456	0 6 6
Chloroform	7,100	760	...	...	0 6 6
Formaldehyde	2,800	180	...	...	0 6 6
Milk-sugar	2,400	130	...	...	0 8 0
Castor-oil, transparent and purified	31,400	1,167	...	...	0 4 0
Liquorice juice	59,000	4,012	...	...	0 5 10
Pharmaceutical preparations—					
Packed for wholesale	83,400	26,834	12,100	3,872	1 16 0
" retail	59,200	16,576	8,500	2,380	4 0 0
Brine-salt lozenges	2,800	728	...	...	1 12 0
Perfumes and cosmetics—					
Packed for wholesale	4,400	704	100	16	2 0 0
" retail	52,000	10,400	2,200	440	4 0 0
Chemical products—					
Lemon juice	57,000	479	...	...	0 0 2
Gum	175,200	12,998	...	...	0 0 2
Exotic resins	25,300	1,721	...	...	0 0 2
Colophonium, pitch, &c.	2,296,600	18,925	2,800	21	0 0 2
Sulphur	1,840,600	9,571	...	...	0 0 2
Coal-tar, liquid	378,100	404	800	1	0 0 2
Lees of wine, dried	12,700	102	...	...	0 0 2
Tartar, raw	18,700	710	...	...	0 0 2
Saltpetre, raw	4,100	34	...	...	0 0 2
Other auxiliary materials, raw	518,900	4,427	100	4	0 0 2
Caustic potash, caustic soda, &c.	2,545,200	27,488	30,500	329	0 0 3
" " liquid	481,900	3,855	28,600	229	0 0 3
Calcium carbide	146,100	2,338	...	...	0 0 3
Alum	49,200	595	...	...	0 0 3
Chloride of lime	1,296,400	7,280	467,200	2,616	0 0 3
Liquid extracts of tannin	1,174,500	15,769	...	...	0 0 3
Litharge	145,000	3,480	...	...	0 0 3
Muriatic acid, raw	6,414,400	15,419	...	...	0 0 3
Sulphuric acid and vitriol	6,144,500	17,819	...	...	0 0 3
Chlorine	50,700	2,028	...	...	0 0 3
Sulphuric acid, liquid	24,400	93	...	...	0 0 3
" " compressed	27,500	462	...	...	0 0 3
Soda, raw	11,700	56	...	...	0 0 3
" crystallised	1,143,600	2,745	1,600	4	0 0 3
" calcined	8,713,000	36,595	...	...	0 0 3
Acetate and sulphate of aluminium	1,641,300	7,878	...	...	0 0 3
Sulphate of iron, copper and zinc	1,309,000	25,388	273,000	7,098	0 0 3
Epsom and Glauber salts, chloride of barium, &c.	5,427,800	32,567	45,700	274	0 0 3
Aniline oil, &c.	843,700	33,748	18,700	748	0 0 6
" compounds	29,200	46,720	900	144	0 0 6
Anthracene, benzoine acid, benzine, benzoline, carbolic acid, naphtha, &c.	4,138,500	99,324	83,400	2,002	0 0 10
Carbolineum (impregnating oil)	310,400	1,490	...	...	0 0 10
Paraffin, purified vaseline, &c.	212,400	5,522	16,600	432	0 0 10
Arsenic acid, sugar of lead, borax, salts of soda (not described)	2,485,000	59,640	163,200	3,917	0 0 10
Chlorate of soda	70,800	2,400	...	...	0 0 10
Catechu	1,119,300	20,147	...	...	0 0 10
Gallic acid, tannic acid, solid extracts of tannin	83,400	4,495	...	...	0 0 10
Glycerine	281,700	10,468	1,900	76	0 0 10
Pyroligneous acid, acetic acid, raw	1,105,300	18,688	...	...	0 0 10
Oxalic acid, oxalate of potash	56,400	1,918	...	...	0 0 10
Arseniate, bicarbonate, hyposulphite of soda	285,900	1,944	5,200	35	0 0 6
Oleine	621,400	12,428	24,000	480	0 0 10
Ferrocyanide of potash, chlorate, and red chromate	126,100	11,197	49,600	2,619	0 0 10
Phthalic acid, resorcine	73,100	19,737	...	...	0 0 10
Potash	241,900	4,161	200	3	0 0 10
Castor-oil, unprepared, Turkey-red oil	374,800	9,745	...	...	0 0 10
Carried forward	...	807,762	...	31,741	

Druggists' Sundries and Chemical Products—continued.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Brought forward ...	...	807,762	...	31,741	...
Chemical products—continued—					
Salicylic acid	24,200	3,194	...	...	0 0 10
Sal ammoniac, ammonia	507,200	8,561	2,100	45	0 0 10
Refined nitre	420,100	8,430	1,300	25	0 0 10
Nitric acid...	284,100	4,432	...	...	0 0 6
Sulphuric ether	275,400	11,016	...	...	0 0 10
Stearine	814,400	33,553	75,800	3,123	0 0 10
Turpentine oil	873,000	30,297	...	...	0 0 10
Hydrate of alumina	9,300	223	...	...	0 0 10
Salts of tin	92,600	4,636	200	16	0 0 10
Carbonic acid	96,100	1,922	...	...	0 5 10
Boracic, pure carbolic, phosphoric acids, &c.	643,700	30,944	25,700	1,232	0 1 8
Tartar emetic, cyanide of potash, phosphorus, &c.	45,900	6,060	17,200	2,581	0 1 8
Bromide, iodine, carbonate of magnesia, &c.	169,300	33,860	47,700	9,540	0 1 8
Citric acid, tartaric acid	137,800	15,439	8,700	978	0 1 8
Other auxiliary materials, prepared ...	195,700	22,892	1,300	156	0 1 8
Potato flour	1,540,800	17,719	...	...	0 0 10
Starch and dextrine, for wholesale ...	1,797,600	27,175	89,800	1,759	0 1 0
,, ,, retail ...	888,000	15,660	16,600	306	0 2 0
Purified resins and shellac	84,200	5,917	14,000	1,037	0 2 6
Spirits of wine	5,984,400	71,346	...	...	0 5 10
Pyrotechnic preparations	9,100	619	600	41	4 0 0
Explosive substances	143,100	13,084	800	80	2 0 0
Gun-cotton	27,100	3,035	...	...	2 0 0
Matches, wax	22,800	1,731	6,000	456	1 12 0
,, wood	278,800	6,134	2,000	44	1 0 0
Cart-grease	140,000	1,344	300	3	0 2 6
Blacking	94,400	2,115	5,700	128	0 5 10
Raw glue, &c.	899,600	34,531	26,400	1,004	0 0 6
Gelatine and fish glues	81,700	7,680	2,000	188	0 5 10
Total	...	1,231,363	...	54,453	...

Table 12.—Machinery and Vehicles.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Steam boilers	643,400	14,628	...	296	0 3 4
Dynamo-electro machines	302,700	26,029	600	56	0 3 4
Agricultural and domestic machines	2,921,700	94,743	59,700	1,934	0 3 4
Machinery for mills	531,700	35,290	2,900	192	0 3 4
Sewing machines	1,145,100	91,553	412,100	34,616	0 3 4
Spinning and throwing machines	533,600	28,124	194,100	9,395	0 3 4
	Pieces.		Pieces.		
Embroidery machines	188	32,817	4	144	0 3 4
	Kilos.		Kilos.		
Knitting machines and looms	36,600	5,563	200	30	0 3 4
Looms and weaving machinery	276,400	6,631	103,300	1,860	0 3 4
Machinery for tools	1,016,100	48,143	37,900	1,895	0 3 4
Other machinery (not described)	11,484,000	593,480	594,700	35,682	0 3 4
	Pieces.				
Engines	6	3,658	...	...	0 8 0
	Kilos.				
Parts of machinery, coarse	5,854,500	201,395	49,200	1,692	0 0 6
,, ,, fine	1,534,700	110,498	23,800	1,714	0 1 8
Iron constructions	2,269,800	54,720	...	334	0 3 4
Driving bands	104,800	22,134	23,800	6,082	0 16 6
Carding machines	8,600	2,838	3,400	1,122	0 16 6
Agricultural implements	538,500	22,186	...	33	0 5 0
Waggons, sledges, &c.	178,900	3,449	...	100	0 5 0
Perambulators and children's sledges	122,000	8,016	4,600	451	0 12 3
Other vehicles	140,900	9,581	...	204	0 16 6
	Pieces.		Pieces.		
Bicycles	15,730	139,396	457	4,118	2 16 0
Ordinary railway carriages	1	1,294	...	...	0 7 6
Narrow gauge railway carriages	9	1,517	...	...	0 9 9
Ordinary goods vans	701	91,330	...	...	0 4 0
Narrow gauge goods vans	775	6,638	...	...	0 6 6
	Kilos.				
Ordinary boats	...	1,761	...	...	0 1 8 to 0 4 0
Pleasure boats	7,600	1,723	...	119	1 4 0
Total	...	1,668,845	...	102,069	...

Table 13.—Gold, Silver, and Plated Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Gold, unworked	945,000	1,310,904	...	...	Free
Silver, unworked	8,896,600	362,736	...	...	,,
Platinum, unworked, or in coins	100	67	...	...	,,
Gold, silver, platinum, rolled	315,800	29,548	16	1,285	0 16 0
Leaf gold, gold and silver wire	116,100	27,103	13	1,149	2 0
Plated goods	4,103,400	36,636	1,585	1,231	2 8 0
Gold and silver jewellery	1,591,100	303,505	422	3,088	8 0 0
Total	...	2,070,429	...	6,703	...

Table 14.—Aluminium, Zinc, Tin, and Lead Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Pure aluminium	5,100	528	...	...	0 4 0
Aluminium alloy	7,900	827	...	...	0 1 3
,, alloy, rolled	7,500	1,587	...	...	0 2 6
,, goods	3,300	990	...	...	1 12 0
Galena and plumbing lead	52,600	736	...	...	Free
Soft lead, in barrels	2,804,900	44,878	...	...	0 0 3
Rolled lead, hard lead	1,353,000	24,354	7,700	311	0 1 3
Unfinished lead goods	32,100	1,734	...	...	0 6 6
Finished lead goods	3,800	426	...	...	0 14 5
Printing type	131,400	19,447	...	...	0 6 6
Nickel	3.000	660	...	...	0 2 6
,, German silver, &c., rolled ...	150,700	30,140	...	...	0 5 9
,, and German silver goods ...	26,100	8,352	400	128	1 16 0
*Zinc, in bars '...	454,000	12,531	...	...	0 0 3
* ,, rolled	1,834,200	53,559	...	...	0 0 10
* ,, goods, unfinished	44,900	3,592	...	...	0 12 3
* ,, ,, finished	58,600	6,094	...	...	1 4 0
Tin in bars	1,023,900	126,964	203,400	25,222	0 0 10
Rolled tin and Britannia metal ...	34,100	5,202	} 1,200	189	{ 0 4 0
Unfinished tin and Britannia metal goods	8,700	1,740			{ 0 8 0
Finished tin and Britannia metal goods	60,500	14,520	1,800	432	1 12 0
Other metals (not described)	168,600	1,145	300	2	Free
Antimony	37,300	1,626	9,800	428	0 0 10
Quicksilver	4,000	880	...	...	0 2 6
Cadmium and bismuth	1,800	432	...	...	0 4 0
Goods marked with asterisk	...	...	...	207	...
Total	...	362,944	...	26,919	...

Table 15.—Pottery and China Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Roofing and gutter tiles	10,851,600	13,488	400	2	0 0 5
Tiles and bricks (kiln dried)	815,000	2,785	...	...	0 2 0
Bricks, slabs, and flagstones	19,089,400	16,813	...	...	0 0 2½
Fireproof bricks	13,934,500	31,063	1,241,800	2,981	0 0 3
Slabs and flagstones of clay	171,300	5,746	...	...	0 5 0
Drain pipes, ordinary	49,500	14,160	74,200	267	0 2 0
,, finished, and polished ...	536,000	3,496	...	...	0 2 0
Crucibles, furnaces, saggars	181,300	725	...	223	0 1 8
Gas retorts	492,500	2,758	...	...	0 2 0
Tiled stoves and tiles for same ...	322,700	5,164	500	9	0 6 6
Stoneware, slabs, and plates, plain, coloured, &c.	4,594,600	20,079	45,500	144	{ 0 0 10 0 1 8 0 5 0
Waterloset fittings of porcelain ...	226,100	13,506	162,800	10,028	0 9 8
Common pottery	1,514,200	21,178	56,900	910	0 2 6
Superior pottery	1,776,200	59,819	90,200	2,995	0 13 0
Porcelain and china goods	942,500	44,040	9,400	564	0 13 0
Total	...	254,620	...	18,123	...

Table 16A.—CATTLE.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per Head.
	Number of Head.	Value.	Number of Head.	Value.	
		£		£	£ s. d.
Horses	10,348	300,285	741	41,476	0 2 6
Mules	158	2,136	...	...	0 2 6
Foals...	1,964	43,183	...	...	0 0 10
Donkeys	338	1,515	...	...	0 0 10
Oxen...	44,495	881,125	...	...	0 12 0
Cattle (for breeding)	3,874	59,416	...	...	1 0 0
Cows...	2,487	35,707	...	...	0 14 5
Heifers	396	5,924	...	...	0 14 5
Calves	11,824	45,806	...	...	0 4 0 to 0 9 3
Pigs	97,433	405,661	12	81	0 4 0
Sheep	81,411	107,441	...	...	0 0 5
Goats	691	579	...	...	0 1 8
Beehives, filled	782	437	...	...	0 0 2
Animals (not described)	8,950	6,345	89	883	Free
Total...	...	1,895,560	...	42,440	...

Table 16B.—ANIMAL PRODUCTS.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Raw hides	885,700	37,367	...	...	0 0 6
,, skins	495,200	67,346	400	32	0 0 6
Saddler's skins, prepared	22,400	15,151	800	512	0 9 9
,, ,, raw	2,200	2,184	100	41	1 4 0
Horse-hair and buffalo-hair, raw	339,700	46,787	2,100	277	0 0 10
,, ,, ,, cleaned ...	181,400	27,573	2,500	380	0 8 0
Other hair	158,200	4,201	...	...	0 0 6
Bristles, assorted	75,500	22,534	...	...	0 1 8
Human hair	1,300	6,024	11	53	2 0 0
Wigmaker's and hair work	200	2,363	4	44	4 0 0
Covers made from animal hair	53,700	5,370	500.	50	0 8 0
Horse-hair textures	5,800	3,136	300	156	3 4 0
Bed feathers	431,400	77,652	...	...	0 5 10
Down, for bedding	31,000	12,400	...	...	0 5 10
Bladders, guts, rennet	620,800	21,908	14,300	572	0 0 6
Wax and wax-work	160,500	11,293	300	57	...*
Horns of animals, finished and unfinished	118,300	5,395	100	7	0 0 3 and 0 0 6
Ivory	200	365	...	...	0 8 0
Fish-bone—					
Rough	1,800	2,524	...	...	0 3 4
Polished	1,100	1,731	...	...	0 13 0
Tortoise-shell and mother-of-pearl... ...	300	626	...	...	0 8 0
Coral, unmounted	200	363	...	...	1 4 0
Pearls ,, ...	...	11	...	...	2 0 0
Sponges	13,500	10,800	200	160	0 16 0
Total	..	385,104	...	2,341	...

* Wax, 1s. 3d.; wax-work, 13s.

Table 17.—Wooden Goods, Wood Furniture, and Brush Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Firewood and charcoal	...	151,259	...	...	...
Planks and rough timber	...	469,513	...	...	...
Prepared wooden goods	...	170,885	...	314	...
Furniture—					
Unfinished	1,156,500	53,379	9,700	427	0 8 3
Painted and varnished...	529,400	28,155	15,100	815	0 13 0
Polished	546,900	47,634	3,200	480	1 0 0
Carved, stuffed, &c.	277,300	36,925	7 800	1,326	1 10 6
Furniture of ebony wood...	62,000	9,994	7,560	1,125	2 0 0
Other wooden ware, and various goods	...	46,785	...	329	0 8 0
Wood frames, finished	200,700	24,077	3,600	404	1 4 6 to 1 13 0
,, ,, unfinished	62,200	2,290	...	...	0 8 3
Basket goods	259,600	21,093	...	221	0 4 0 to 2 9 0
Brush ,, ...	122,300	21,166	...	236	1 0 0 to 2 0 0
Sievemaker's goods	8,400	546	...	...	0 12 3 to 1 13 0
Bark for tanning purposes	9,595,000	39,716	...	...	...
Cork goods	257,100	24 823	...	32	0 4 0
Cabinetmaker's wood	...	78,797	...	...	0 0 5
Wood carvings	4,700	682	...	...	1 5 0
Total...	...	1,229,714	...	5,709	...

Table 18A.—Music, Musical Instruments, Art and Literature.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Sheet music	77,200	16,453	...	29	0 0 10
Musical boxes	19,600	4,610	...	...	2 0 0
Works for musical boxes	12,500	1,250	...	191	0 13 3
Pianos, harmoniums	285,100	25,634	...	350	1 4 0
Other musical instruments	137,200	22,664	...	152	1 0 0
Parts for musical instruments	59,900	9,682	...	15	0 13 3
Pictures, engravings, photographs and clichés	190,300	105,370	...	3,400	0 4 0 and 1 5 0
Sculpture	18,100	5,972	...	7	0 13 0
Cast-iron statues	3,600	644	...	19	0 4 2
Statues in other metals	6,500	3,877	...	...	0 16 6
Plaster casts and mouldings	79,200	8,494	...	36	0 5 9
Glass paintings	13,900	5,638	...	344	1 4 0
Natural curiosities	28,600	9,902	1,600	1,325	0 3 3
Books and maps	1,856,300	339,686	13,700	3,699	0 0 10
Total	...	559,876	...	9,567	...

Table 18B.—Scientific Instruments and Electrical Apparatus.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Scientific instruments and apparatus ...	66,500	48,740	1,600	1,544	0 13 3
Orthopædic apparatus and surgical bandages	35,100	31,844	1,200	2,175	1 12 0
Microscopes, spectacles, &c.	15,100	17,428	...	317	1 12 0
Electrical apparatus	486,700	100,327	10,000	2,216	0 5 0
Total	...	198,339	...	6,251	

Table 19.—Paper and Paper Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Paper fibres, moist...	291,000	1,746	...	...	0 1 0
,, dry	3,424,200	38,229	...	...	0 1 0
Common packing paper	666,800	7,563	500	8	0 3 4
Printing and writing paper	2,163,500	66,238	92,300	3,692	0 6 6
Coloured paper and paperhangings ...	964,900	53,449	61,600	3,942	0 13 0
Note paper and envelopes, in boxes ...	317,100	22,980	16,900	1,352	0 16 0
Labels, circular forms, and envelopes ...	814,900	65,192	17,800	1,424	1 5 0
Common pasteboard	1,549,800	11,158	...	...	0 3 0
White or covered pasteboards	467,700	6,588	...	278	0 8 0
Bookbinding and bandbox materials ...	441,200	61,768	7,200	1,008	1 8 0
Paper linen	168,800	20,256	...	72	1 12 0
Playing cards	3,400	408	...	...	4 16 0
Total	...	355,575	..	11,776	...

Table 20.—Manure, Rags, and Fodder.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	d.
Animal waste	4,890,100	25,855	6,400	12	Free
Vegetable waste	1,061,000	665			,,
Mineral waste	4,149,200	21,958			,,
Dregs and moist lees	432,700	1,200	...	...	2
Fodder (bran, oilcakes)	28,506,900	153,089	...	...	Free
Rags, &c.	6,919,300	58,120	17,100	144	2
Stable dung	8,376,300	7,111	...	...	Free
Raw manure, Chile nitre, waste sulphuric acid	44,348,100	122,313	...	...	Free
Prepared artificial manure	24,176,200	96,872	...	...	3
Total	...	487,163	...	156	...

Table 21.—Colouring Materials.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	s. d.
Colouring earth, raw	1,236,300	1,646	...	...	0 2
,, ground	2,724,600	13,793	14,600	146	0 6
Colouring berries	1,375,700	26,527	...	...	0 2
,, ground	603,300	7,251	...	...	0 6
Colouring woods, in blocks	870,800	7,736	...	...	0 2
Indigo	52,000	15,639	...	...	3 4
Orlean, orseille, cochineal	6,200	276	...	...	3 4
Alizarine, artificial	273,100	18,571	...	...	2 6
Other extracts for dyeing	233,200	9,202	18,100	724	2 6
Lamp-black and red lead	223,200	4,874	2,100	48	0 10
White lead, &c.	641,600	15,398	900	22	2 6
Varnishes	446,900	35,300	35,000	11,900	14 5
Oil varnishes	42,600	1,704	1,900	76	8 0
Aniline colours	312,900	62,580	8,300	1,660	6 6
Chrome yellow, mineral blue	409,100	27,817	7,100	483	5 10
Colours, and cakes in bottles	33,400	2,116	13,000	1,040	16 0
Colours in boxes	37,400	5,984	2,400	384	16 0
Colouring materials (various)	1,425,000	36,993	19,400	504	2 6 to 4 0
Other bright colours	178,200	14,256	300	24	16 0
Total	...	307,663	...	17,011	..

Table 22.—India-Rubber and Gutta-Percha Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
India-rubber and gutta-percha	21,300	6,483	100	31	0 0 10
,, in balls, slabs, and straps ...	69,700	22,304	3,100	992	0 0 10
,, threads	72,300	23,902	21 000	15,540	0 0 10
,, tubes, pipes, &c.	189,500	30,219	5,700	1,072	0 6 6
,, carding cloths	18,300	6,515	18 200	6,479	0 3 4
Elastic textures	18,700	9,350	1,500	750	1 12 0
Other india-rubber goods	52,900	20,160	9,300	3,534	1 0 0
Total	...	118,933	...	28,398	...

Table 23.—Glassware.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Roofing glass and glass tiles	1,108,200	11,304	...	...	0 5 8
Ordinary window glass...	5,450,700	58,591	1,000	12	0 6 6
Coloured and frosted window glass	65,600	1,365	200	4	0 16 0
Glass balls, rods, &c.	27,500	2,200	400	32	0 1 3
,, bottles, ordinary	1,691,600	10,150	...	...	0 2 6
,, goods, ordinary black	80,200	545	...	...	0 3 3
Glassware, half-green glass	815,900	7,833	1,000	10	0 5 0
,, (uncoloured glass)...	1,842,200	30,199	1,900	30	0 6 6
,, cut, engraved, and coloured glass	672,600	32,004	...	196	0 16 0
Glass, plain, coloured, and gilt	232,900	12,670	...	582	0 16 0
Hollow glassware, coarse	39,800	1,114	...	...	0 6 6
,, ,, superior	1,900	259	...	...	1 0 0
,, ,, with stoppers	22,100	900	500	22	0 13 0
Acid bottles, coarse	37,600	180	...	...	0 5 0
Soluble glass, enamel, and glass beads ...	50,100	2,605	1,500	78	0 3 3
Mirror glass, under 70 ins. square, not lined	8 000	461	...	...	0 11 6
,, ,, over 70 ins. square, not lined...	620,300	47,639	1,900	138	0 13 0
,, ,, under 70 ins. square, lined ...	41,700	3,836	100	9	0 11 6
Mirrors, under 70 ins. square...	39,000	3,947	100	10	0 13 0
,, and mirror glass, over 70 ins. square	203,300	20,574	400	40	1 12 0
Total	...	248,376	...	1,163	

Table 24.—Agricultural Products.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Fresh vegetables, &c.	1,060,900	4,858	1,800	14	Free
Grass and clover seeds	855,900	34,359	93,800	2,251	,,
Other seeds	729,700	33,226	6,100	220	,,
Hay	25,300,200	71,943	...	...	,,
Straw, &c.	25,518,100	59,522	...	...	,,
Oil-seeds and oil-fruits	1,332,300	17,340	...	...	0 0 3
Flower bulbs...	40,600	2,824	100	8	2 0 0
Trees, shrubs, &c., with roots	675,000	36,721	900	83	0 0 10
,, ,, without roots ...	334,800	7,829	...	...	0 0 10
Total	...	268,622	...	2,576	...

Table 25.—Oils, Soaps, and Fats.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Oils for food purposes, in bottles ...	45,000	2,160	...	...	0 0 10
Olive oil, in barrels...	1,770,900	68,827	...	...	0 0 10
Other oils for food, in barrels	2,370,000	71,100	...	...	0 0 10
Linseed oil, in barrels	2,515,000	55,330	...	...	0 0 10
Oils for various trade purposes; vegetable wax	6,198,700	143,394	338,200	7,115	0 16 0
Other oils, in bottles	12,400	399	...	10	0 16 0
Tallow	1,385,400	33,250	143,800	3,451	0 0 5
Codliver oil, &c.	963.900	17,016	...	384	0 0 5
Candles	68,300	2,919	12,900	552	0 13 0
Ordinary soap	1,775,200	31.971	...	332	0 4 0
Perfumed soap	94,000	11,280	8,600	1,032	1 12 0
Total	...	437,646	...	12,876	...

Table 26.—Watches, Clocks, and Parts of same.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Quantity.	Value.	Quantity.	Value.	
	Pieces.	£	Pieces.	£	£ s. d.
Nickel watches	9,008	1,490	31	15	4 0 0
Silver ,, ...	915	435	39	28	4 0 0
Gold ,, ...	3,015	10,216	27	108	4 0 0
Chronographs and repeating watches	62	200	...	...	4 0 0
Works for watches, finished	5,140	2,233	534	256	4 0 0
Nickel cases	132,200	16,478	...	...	4 0 0
Silver ,, ...	2,771	762	...	...	4 0 0
Gold ,, ...	817	2,104	277	1,108	4 0 0
	Kilos.		Kilos.		
Parts of watches, unfinished	31,900	62,720	200	480	0 13 0
,, ,, finished	600	1,760	...	...	4 0 0
Parts of clocks	6,500	1,432	...	...	0 13 0
Pendulum clocks...	24,000	3,919	...	11	0 16 0
Clocks (American and Black Forest systems)...	149,100	19,127	...	...	0 16 0
Other watches and clocks	29,500	9,233	100	36	2 0 0
Total	...	132,109	...	2,042	...

Table 27.—Straw and Straw Goods.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Straw, reeds, bark, unfinished ...	1,145,900	21,710	...	...	0 0 3
,, ,, dyed and woven ...	2,594,900	24,144	...	...	0 1 3
Brooms of Sorgho grass	567,600	9,082	...		0 2 0
Common mats, baskets, brooms, &c....	80,000	4,800	5,800	348	0 12 0
Straw plaits	262,600	21,786	...	...	0 5 0
Superior straw goods	3,600	1,080	300	90	2 8 0
Total	...	82,582	...	438	...

Table 28.—Lamps and Hardware.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Hardware goods, common	939,100	232,107	30,100	9,873	1 4 0
,, superior	28,300	25,537	100	144	4 16 0
,, (ornaments)	88,800	63,247	900	248	2 0 0
Lamps	153,200	11,634	7,100	1,173	1 0 0
Total	...	332,525	...	11,438	...

Table 29.—Toys, Fancy Goods and Travelling Articles.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos.	£	Kilos.	£	£ s. d.
Toys	761,000	54,821	8,500	935	0 16 0
Fancy leather goods	39,600	7,565	1,500	468	2 8 0
Total	...	62,386	...	1,403	...

Table 30.—Writing and Drawing Materials.

Description.	Total Imports from all Countries.		Imports from Great Britain exclusively.		Duty per 100 Kilos.
	Weight.	Value.	Weight.	Value.	
	Kilos	£	Kilos.	£	£ s. d.
Lead pencils, slates and slate pencils	70,200	7,460	...	...	0 16 0
Writing and drawing materials ...	274,400	28,399	19,500	3,276	1 0 0
Total	...	35,859	...	3,276	...

Swiss Imports from Great Britain.

able.	Description.	Value.			
		1898.	1899.	Net Increase.	Net Decrease.
		£	£	£	£
1	Wool and woollen goods	297,303	345,060	47,757	...
2	Cotton and cotton goods	695,342	795,314	99,972	...
3	Silk and silk goods	27,982	34,257	6,275	...
4	Mineral produce	24,748	30,812	6,064	...
5	Iron, ironware, and wire goods	348,855	433,328	84,473	...
6	Copper and brass goods...	12,329	16,888	4,559	...
7	Leather and shoe goods	75,448	69,659	...	5,789
8	Flax, hemp, jute, ramie, &c.	97,115	79,033	...	18,082
9	Alimentary products	38,249	49,856	11,607	...
10	Ready-made articles of clothing	32,050	35,894	3,844	...
11	Druggists' sundries and chemicals	55,062	54,483	...	579
12	Machinery and vehicles	113,522	102,069	...	11,453
13	Gold, silver, plated goods, and jewellery ..	21,450	6,703	...	14,747
14	Aluminium, zinc, tin, and lead goods ...	18,877	26,919	8,042	...
15	Pottery and china goods	18,059	18,123	64	...
16A	Cattle ... ... }	32,133	44,781	12,648	...
16B	Animal products... ... ... }				
17	Wood, wooden goods, furniture, and brush goods	6,315	5,709	...	606
18	Music, musical instruments, art, and literature. Scientific instruments, and electrical apparatus	14,588	15,818	1,230	...
19	Paper and paper goods	13,298	11,776	...	1,522
20	Manure, rags, and fodder	11	156	145	...
21	Colouring materials	12,470	17,011	4,541	...
22	Indiarubber and gutta-percha goods ...	29,260	28,398	...	862
23	Glassware	966	1,163	197	...
24	Agricultural products	4,434	2,576	...	1,858
25	Oils, soaps, and fats	29,906	12,876	...	17,030
26	Watches and clocks, and parts of same ...	2,230	2,042	...	188
27	Writing and drawing materials, toys, straw, lamps, hardware	16,349	16,555	206	...
	Total...	2,038,351	2,257,259	291,624	72,716
	Actual increase of British imports into Switzerland in 1899	...	...	218,908	

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REPORT ON THE

AGRICULTURE, HORTICULTURE, AND OTHER NATURAL RESOURCES OF THE VILAYET OF TRIPOLI, NORTH AFRICA.

Presented to both Houses of Parliament by Command of Her Majesty, JUNE, 1900.

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Weights and Measures, with their English Equivalents.

1 dram	= 1·818 dram
400 dram or 1 oke	2·841 lbs.
1 cantar or 40 okes	113¼ lbs.
1 marta of barley of Tripoli = 9½ okes	26·99 lbs.
15 marta of barley of Tripoli	1 imperial quarter
1 marta of barley of Khoms and Zleiten = 9¼ okes	
14¼ marta of barley of Khoms and Zleiten	1 imperial quarter
1 marta of barley of Misurata = 10¼ okes	
14 marta of barley of Misurata	1 imperial quarter
1 marta of wheat = 13 okes	37 lbs.
2 marta of wheat, barley and olives = 1 kilá	
1 jarra (olive oil) = 6 garaffs	2 quarts
1 pike or kandaza	27 inches
1 draa	18 inches
1 jabbia (land measure) = 100 gedula	9 square metres
750 kilés of Tripoli	100 imperial quarters
816 kilés of Constantinople	100 imperial quarters

Report on the Agriculture, Horticulture and other Natural Resources of the Vilayet of Tripoli, North Africa

By Mr. Consul-General Jago.

(Received at Foreign Office, May 29, 1900.)

Extent and area.

The vilayet, which does not include the adjoining sub-province of Barca, or Bengazi, has an area of about 410,000 square miles, or more than three times greater than that of Great Britain and Ireland.

It lies between the 11° and 19° of east longitude of the meridian of Greenwich, and the 25° and 33° of north latitude. Of this area about three-fifths are unproductive, consisting of sandy and rocky wastes and plateaux, thus leaving about 164,000 square miles of more or less fertile and productive soil, almost all situated between the sea and the Tripoli range of hills on the south, varying in breadth from 90 miles near Naloot on the west, to 40 to 60 miles near Tarhuna on the east; and in length from the Tunisian frontier on the west, to Sert on the Gulf of Syrta, the boundary line between Tripoli and Barca on the west, a distance of about 400 miles.

These Tripoli hills, of limestone, averaging in height about 1,000 feet, are a continuation of the Atlas range which, beginning in Morocco, run through Algeria and Tunisia, finally dwindling away in a north-easterly direction in the plains of Tarhuna to the south-east of the city of Tripoli. They form the beginning of that plateau which runs south to the Fezzan, and are indented with innumerable wadis; these are formed by erosion of various lengths and breadths, some nearly 30 miles long, springing from their crests or watersheds, and running towards the sea, losing themselves in the plains in flood in winter and dry in summer. The various sections of these Tripoli hills are known by the names of Nefusa, Yefrin, Gharian, and Tarhuna, the first three being generally designated as the "Jebel," or mountain, the uplands, wadis, and hills of which are extensively planted with olives, fruit trees, barley, &c., and are largely inhabited. The most fertile portion of this coast strip extends from Cape Misurata on the east to Zarvia, 50 miles to the west of Tripoli, a distance of about 150 miles, with a breadth of 40 to 60 miles. It is extensively planted with palm groves, alternating with large patches of arable

land. Olives, oranges, and lemons are also largely cultivated, while below the date and olive trees cereals and green crops of various kinds are grown. Beyond Zarvia to the west the plain becomes more and more barren and stony, with sand hillocks, as it approaches Tunis, and is consequently thinly populated. It is along this strip of coast line, in which must be included a large portion of the plateau of the Jebel, that cereals and fruit trees are cultivated. The Fezzan, containing about 120,000 square miles, of which only 3,000 square miles are oases, produces no corn or fruit save the date, the produce of which latter is insufficient for the food of the inhabitants and their animals and has consequently to be made good by large importations from the coast line.

Climate. The climate of the coast line may be characterised as hot and damp. The medium temperature taken over a period of the last six years gives 68° Fahr.

Frosts are unknown, although hoar frosts sometimes occur and cause injury to the crops, while in the early spring the Gibli, or hot, dry desert wind often does harm to the young plants. In the interior, south of the hill ranges and plateaux the temperature averages about 85°. In exceptional winters snow is not uncommon for a few days on the hills to the south of Tripoli.

Population. No materials exist for forming an accurate estimate of the population, but taking the numbers as given by the last Turkish official record we arrive, after deducting the Europeans, native Jewish residents, and the inhabitants of the Fezzan, at 299,140 adult males, giving a total population of Tripoli Proper, that is of the three Sandjaks of Tripoli, Khoms, and Jebel el Gharb, of about 900,000 souls.

The vast majority inhabit the coast line and the wadis and uplands of the Tripoli hills, the former living in tents as sedentary nomads, and the latter in stone villages; they are all dependent for their subsistence on the products of the soil and their flocks and herds.

Rainfall. Little rain falls in Tripoli and rivers are non-existent. The average fall is about 19 inches during the rainy season which lasts from the months of November to March, and which, if equally distributed during these months, would ensure bountiful crops of cereals. But unfortunately this is rarely the case, and in consequence four good harvests out of 10 can only be reckoned upon. For instance, the total rainfall in the season 1894–95 was 20 inches, or 1 inch beyond the average, but the fall in December alone amounted nearly to 15 inches, or three-fourths of the whole, and then almost entirely ceased after January 2, producing one of the worst harvests on record. The previous harvest, that of 1893–94, had been phenomenal in point of yield. The crops of 1896 were fair, the rains having been more equally distributed, 7 inches falling in January, 2 inches in March, and 1½ inches in April. Those of 1897, again, were very bad, abundant rains falling in February, and hardly any in January and March. 59 rainy days occurred in 1898, and 50 in 1899.

Irrigation.

Tripoli possesses no water-course worthy of the name of a river. In the rainy seasons torrents springing out of the wadis of the hill range find their way to the sea or lose themselves in the marshes but become dry in summer. Some of them run a distance of 60 miles. The principal torrents are those on the south-eastern slopes of the Gharian chain of hills (Jebel), such as the Sofegin issuing from Jebel Nefusa, watering the territories of Zintan and Mizda, and falling into the sea to the south-east of Misurata. The Semsen, almost parallel to the former but more to the south, falls into the Gulf of Syrta. On the northern slopes we have the Zeggar, almost parallel to the Tunisian frontier; the Beida, which finishes near Zuara; the Kam, or ancient Cinyps, rising in the hills of Tuarga, traversing a country famed in ancient times for its extraordinary fertility and timber, and losing itself in the Mediterranean. Local history relates that at the beginning of the century a torrent came down from the northern slopes, cutting a bed through the palm-groves of Zenzur, and then into the sea, discolouring the latter as far as the island of Jerba, a distance of about 120 miles.

At the present time nothing is done to utilise for cereal or other cultivation the large amount of water thus coming down from the hills and allowed to run waste into the sea or form stagnant and unhealthy marshes on the coast line. Unlike Cyprus with its similar small rainfall, absence of rivers and dependence on cereal cultivation, where the approach of torrents from the hills is eagerly watched for and availed of to the fullest extent by the peasantry for the irrigation of their fields, the peasant of Tripoli takes no heed of such supply.

The gigantic remains of Roman dams throughout the country in the hill ranges and slopes, show to what extent in ages past the water supplies were valued and utilised to the great benefit of the country, the cereal produce of which caused it to rank as one of the granaries of Rome. Evidence tells us, besides, that in those days the land was thickly wooded, largely cultivated and populated.

Since those days great climatic changes must have occurred to alter the face of the land and convert it to its present arid sun-dried condition. In those early times the rainfall was perennial, far in excess of the present, and apparently sufficient for all purposes of agriculture; so much so that modern travellers have sought to ascribe the construction of these dams to the necessity of providing against periodical inundations consequent on the perennial rainfall of that period. It is difficult, however, not to believe that the works in question which were thrown across wadis, and at different levels, served also as reservoirs for purposes of irrigation, as is shown to-day by the existence of remains of similar dams in Eastern Palestine.

However great the perennial rainfall of those days it could hardly have entirely sufficed for the purposes of agriculture in a country like Northern Africa.

With the Arab invasion of the 10th century many changes

occurred: among others, disafforesting with consequent diminution of rainfall and general aridity of the soil; decrease of population, with land thus thrown out of cultivation, permitting the free encroachment of the sands blown up from the seashore over a large portion, rendering it unproductive as beyond the powers of the reduced population. The ruins of the dams naturally followed such a state of things. Idrisi, the Historian, writing about Tripoli in 1154, says: "Before the present epoch all the neighbourhood was well cultivated and cultivated with plantations of figs, olives, dates, and every kind of fruit trees, but the Arabs destroyed this prosperity, and the people were obliged to abandon it; the plantations were devastated, and the watercourses stopped up." The olive groves in the Tarhuna district which in Roman times covered the hills for several hundred square miles no longer exist, and not an olive tree can be found in that part of the country which is strewn with the ruins of countless ancient oil-presses.

Irrigation at the present day is only practised in respect of the plantations, or so-called gardens, surrounding the centres of population where dates, olives, oranges, lemons, and other fruits, vegetables, green fodder crops, and a little corn are raised, the water being drawn from wells by ox or camel. Artesian wells have no existence, and the example of the French in the sandy wastes of Southern Algeria in constructing such to the great increase of palm groves, orchards, &c., has not been followed nor indeed thought of.

Mr. Robinson, in his work on Haussaland (London, 1897), page 20, speaking of the desert which lies to the south of Tunis and Algeria says: "Pitched our tents at an oasis which had been formed by an artesian well constructed by M. Lesseps, the water from which rises 25 feet into the air, and is made to irrigate 400 to 500 acres of land on which are growing date palms, pomegranates, tomatoes, onions, and cucumbers. Previous to the construction of this well the whole of the oasis was nothing but barren sand."

Although there is water in abundance almost everywhere and at little depth, apart from the numerous wells throughout the country used for the irrigation of fruit trees, green fodder, and corn patches, no attempt is made to add to their number or to lessen the expense and labour entailed by the constant employment of man and beast in drawing water by the employment of the modern windmill. Efforts made to persuade the landowner to employ the windmill with its pump and constant water supply in a country, the wind of which has an average force of 6 miles an hour, have not succeeded. The initial expenditure and doubts as to its efficacy have proved so far insuperable.

Area under cultivation.

No cadastral survey of any portion of the vilayet has ever been made, and it is thus difficult to estimate the amount of cultivable land which is not under cultivation. Some writers have estimated it as 80 per cent of the whole. Intelligent and experienced natives place it as high as 90 per cent. While cereals are cultivated in all districts more or less, the bulk is raised in the

plains of Ketlis, or Guddes, Roness-Table (Gharian), Jefara and Hassassin in the Misurata district.

In the circumscriptions of Tripoli, Khoms, Jebel, Orfella, Tarhuna, Misurata, and Gharian, 50 per cent. of the lands are sown in good years when the winter rains are propitious. No system of rotation of crops is practised owing to the practically unlimited extent of land at the disposal of the cultivator, and notably in the plains of Tarhuna, Orfella, and Misurata land lies fallow for from three to five years.

Thus apart from the large extent of fertile sand covered lands which requires only labour and water to become productive, the vast bulk of arable land nominally occupied by the peasants for cereal cultivation is through scarcity of population and lack of water allowed to remain waste. That these sand covered lands have not lost their original fertility is evidenced by the fact that of late years considerable quantities have been reclaimed near the centres of population where labour and capital are relatively more abundant, especially in those favoured districts which pay no taxes of any kind, by the simple process of ploughing and sowing, giving in years of ordinary rainfall good cereal crops. Other reasons, however, than lack of labour and water militate against extension of cereal cultivation. Deprived of encouragement or support from any quarter, incessantly face to face with the tax-gatherer, the peasant only sows sufficient ground for the support of himself during the coming year, which is regulated by the number of his family and his riches in cattle, sheep, and camels. He has no artificial wants to be supplied by increased energy in the direction of production. He has no wages to pay; the labours of himself and his family suffice for the cultivation of his fields, and their industry supplies all that is required in the shape of food, raiment, tents, &c., while natural pasturage in ordinary times supplies the maintenance of the few animals he may possess. Extended cultivation would, undoubtedly, give him in good years a surplus for sale and for the purchase of those silver ornaments so dear to his womankind, and for the tea and sugar which form the extent of his artificial wants and of which he is, when able, a large consumer, but the cost of transport to a market by camel in a country without roads, carts, or railways, is little compensated by the low prices which obtain in years of bountiful harvests. Thus during the last six years the price of an imperial quarter of barley in Tripoli, the crop of which forms his staple food, and the mainstay of the country, has ranged between 12*s.* 1½*d.* and 1*l.* 3*s.* 5*d.* according to the success or failure of the harvest of the year. Any investments by him of surplus cash, after payment of taxes, in purchase of cattle for increased cultivation must be regulated entirely by the labour power of himself and family, with again due regard to the increased attention to himself of the tax-gatherer. Thus through indolence and poverty, lack of initiative and encouragement, he never extends his area of cultivation beyond what is required for his strict necessities. Regarded as

a whole he is lazy and unenterprising, and sees no necessity for cultivating more land than did his father before him. If on the contrary land was sown in excess of his wants whenever abundant rains gave fair promise of good crops, he would be able to provide for years of scarcity, but in general each cultivator limits himself to sowing a certain quantity of seed determined by fixed ideas and no more. It must, however, be acknowledged that he is heavily handicapped by the knowledge of the fact that out of 10 he can only calculate generally on four good harvests owing to the little and precarious rainfall of the country, and that under present circumstances at least he stands to lose rather than gain by extending his cultivation. Thus even in years of abundance the yield only little surpasses what is required for home consumption and seed purposes, leaving a comparative insignificant quantity available for export, while in years of ordinary crops the necessary importations of breadstuffs becomes relatively small, and only acquires great importance when years of dearth and dryness prevail. And it is often with great difficulty and deprivation that he succeeds in procuring, if he has not been able to put by out of the preceding harvest, besides enough for his daily wants, the quantity of seed required to be sown. Recourse is then often had to the native usurer who advances the necessary seed at about 6*s.* per bushel, receiving back at harvest time an equivalent quantity at a price fixed beforehand at 9*d.* or 10*d.* per bushel, resulting in the usurer generally receiving the half of the total value of the crop. The surest sign of a good or bad harvest is the activity of the silversmiths of the towns in selling to or buying from the Arabs; selling in poor harvests to provide for seed and taxes, and rebuying when good times occur. Even the Arab of the oasis of Tripoli, and the dweller in the towns, who give themselves, among other occupations, to agricultural pursuits, and who are both in possession of superior means to the nomad, never cultivate largely in order not to risk the loss of the money they invest. When they have a little spare capital they invest it in the purchase of houses or landed property which guarantees them a fair amount of interest, and then when the sowing season comes around they are frequently obliged to raise money for the purchase of seed at high rates of interest pledging often their houses, or the jewellery of their families, for the purpose. Compared with the Arab nomad those of this class have far greater expenses to incur such as the cost of frequent journeys to their fields, payments of wages of harvesters, guards, &c., the rates of which naturally increase at these stated periods, while the nomad who lives on his land is exempted from all such expenses, the manual and other labours being performed by himself and his family. For all these reasons the comparatively well-to-do Arab never extends his area of cultivation, in order not to risk in the event of bad harvests all he possesses, and in this manner cereal cultivation remains stationary in a country where it could under altered circumstances become more flourishing and much larger quantities of land be brought under cultivation.

Suspicious of their fellow men and lacking initiative, union among them for their general good, even when their vital interests are concerned, is impossible. Thus in the plain of Medjneen, six hours from Tripoli, the fertility of which was proverbial, by reason of the natural irrigation produced during the rainy season by the water issuing from the wadi of the same name, the watershed of the neighbouring hills, the crops are now dependent solely on the precarious rainfall, and yield 50 per cent. less than what they did some 30 years ago. Then the river cut for itself a new bed diverting its waters to the sandy desert between it and Tripoli, the gardens of which it menaces with destruction during heavy rains in seeking an outlet to the sea. The principal owners of these lands, the wealthiest and most influential of the Tripoline families, have, in vain, all these years, endeavoured to concert among themselves for the necessary expenditure to restore the river to its original bed, the cost of which would be covered by the proceeds of one-quarter of an ordinary year's harvest. It is true that 15 years ago they subscribed 400*l.* for the construction of a dam which was, however, speedily carried away by a flood. At the present time these lands are saleable at half their former value.

The owners pay no taxes of any kind, and can, therefore, hardly call upon the Government to execute the necessary work, but the Government itself is also a large proprietor letting its lands to the public at a rental of one-fourth of the produce, lately increased by the addition of the tithes, and is therefore directly interested in the restoration of the former system of irrigation; no move, however, is discernible, and under present circumstances is impossible, although the profits would be large and incontestable. But the owners fight shy of each other, and more especially of Government intervention in view of the thousands of pounds lately uselessly expended in trying to build a sea-wall at Tripoli and in endeavouring by costly works to increase the water supply of the town, both enterprises having been rendered abortive through lack of technical skill, and its substitution by amateur engineering. The sea-wall has been swept away and the water-works abandoned.

European colonisation.

Apart from attempts made now and again, but now long abandoned, by a few Italian and Maltese families to engage in agriculture, no effort has ever been made by Europeans to this end. Lack of rain, the necessity of irrigation and labour, little protection, and less encouragement, and want of capital, have rendered all such attempts futile. Living far from centres of European population, among a people alien to them in religion, habits, and customs, and regarded with little favour by their surroundings, the few who have tried it have long since given up the task as hopeless. Given the existence of the three essentials, namely, encouragement, protection, and capital, there seems little doubt but that much could be done and with profit to all concerned.

Land tenure.

Although in theory the land belongs to the Sultan, it is prac-

tically possessed by the tribes and families inhabiting and cultivating it, paying in return to the Government the verghi and tithe. It is only in the districts of Ketlis, Medjneen, and Wadi el Heera, that land is held in freehold by individual holders, as also those situated to the north and south of Jefara, except a portion which belongs to Government.

The greater part of these freehold lands are let to third parties at a rental of one-fourth of the year's crops, payable in kind, but of late years the rental of Government lands has been increased by the tithe, or one-tenth of the produce.

With regard to the lands of Hassassin, situated one day's journey from Misurata, upon which it depends, and to those in certain wadis in the neighbourhood of Orfella, they are nobody's property, but according to an ancient custom are cultivated by the first arrivals on the spot. Thus, when rain seems certain in the fall of the year, the villagers for miles around mount their horses and gallop in furious haste to the lands in question. Each on arrival pegs out his claim of the portion he has chosen by placing his horse, saddle, tarboush, and cloak at its different corners, thereby proclaiming himself its possessor for the coming season. He is, however, obliged to till and sow at once, otherwise he forfeits his right. The lands are of exceptional fertility owing to the presence of watercourses, which, during the rainy season, supply abundant natural irrigation.

Cereal yield.

A good crop is so called when twentyfold of the seed sown is realised, a poor one when the yield is only tenfold. A return of seven or eightfold suffices only to recover expenses and seed sown. In the favoured districts of Ketlis, Misurata, Hassassin, and Gharian the cultivator only acknowledges a good crop when it yields him fortyfold.

Methods of cereal agriculture.

The methods employed at the present day are the same which have obtained for ages past, and no attempt to introduce modern ideas has ever been made.

When the first heavy autumnal rains have well saturated the ground, the seed is thrown broadcast by hand on the land, which is then ploughed up, and the seed thereby covered in; the rest is left to nature. The use of the harrow or of weeding is unknown; no manure is employed, and, in fact, is not procurable. The only fertilisers are the droppings of animals pasturing on the stubble after harvest, and then only in the rare instances where the peasant is rich in flocks and herds. The plough constructed of wood, tipped with iron, is from 15 to 18 inches long, by about 4 inches broad, and turns up the soil to a depth of about 3½ inches. It is drawn by one animal, cow, camel, ass, or old horse, and weighs from 14 to 22 lbs., according to the strength of the animal and the condition of the soil. Although by this process the soil may be said to be scratched rather than ploughed, experience has proved that where the rainfall is small, deeper ploughing is prejudicial to the young plants by exposing too great a depth of soil to the drying action of the weather, thus preventing them in due time from profiting by the under-

lying moisture. Some years ago two Scotch gentlemen in Cyprus engaged in agriculture introduced light Scotch ploughs on their lands, but were obliged to revert to the native plough as best adapted to the climate and its small rainfall.

But even with these primitive methods, such is the fertility of the soil, aided solely by atmospheric agencies, that, given abundant and opportune rains, the results are surprising in point of yield. The superabundance of available land must, however, also be taken into account, and the long fallow which it permits.

In the date and olive groves of Tripoli, where barley, and sometimes a little wheat, is extensively grown in patches below the trees, manure procurable from the city is largely used, and coupled with irrigation facilities from wells, allow of two crops a year being taken off the ground, a winter crop of barley or wheat, and a summer crop of green cattle food or henné. In rare cases only the substitution of one year's fallow for cropping with manure obtains.

Once the sowing is done, the peasant of the plains retires to his tent or house, and does not again approach his field until the near approach of harvest, when he returns and plants his tent to await maturity, warn off thieves, and sometimes scare away the birds. When the harvest is ripe, the grain crop is cut with a tiny sickle close to the ground, piled up in small sheaves, which are later taken to an adjoining threshing floor of level, barren, rocky ground. Flails for threshing purposes are never used, but in their place horses or oxen are employed in trampling on the corn, dragging a large heavy square piece of wood, the under part of which is thickly studded with sharp flints. The grain being thus separated from the chaff, a windy day is awaited, when the whole is thrown into the air by spades, baskets, or the hands, the grain falling to the ground and the chaff being blown to a greater distance. The grain, which is too often mixed with earthy particles or small stones, is then ready for the market.

Products of the soil.

The agricultural and horticultural products of the soil, according to their relative importance, may be enumerated as follows:—

Breadstuffs.

Breadstuffs: Barley, wheat, guinea corn, bishna, or millet.

Fruits.

Fruits: Dates, olives, oranges, lemons, grapes, figs, apples, apricots, peaches, plums, pears, medlars, ground nuts, and a few almonds.

Vegetables.

Vegetables: Potatoes, onions, garlic, egg-plants, pumpkins, vegetable marrows, cucumbers, turnips, carrots, cabbages, spinach, radishes, lentils, cauliflowers, bread and water melons, red pepper, French and broad beans, tomatoes, peas, salads, and a little indian corn.

Green crops for cattle.

Green crops for cattle: Lucerne, guinea corn, millet, and madder-root tops.

Seeds.

Seeds: Coriander and Cretan fennel.

Vegetable dyes.

Vegetable dyes: Madder roots and henné.

The harvest seasons of the various crops are arranged by nature as follows:—For cereals, barley in April, wheat in

May. For grapes, figs, and apricots, in the late spring and summer; for dates, olives, and melons, in autumn; for oranges and lemons, in winter. For vegetables, from November to September.

Barley. The natives and agricultural classes of Tripoli being consumers of barley as a food stuff, and not of wheat, the proportion of the former is more than three-fourths of the total area sown. It constitutes the food of the bulk of the people, and its harvest forms the mainstay of the country, the prosperity of which for the time being depends on the success of its harvest. Owing to its excellent quality and whiteness it is sought after for malting purposes, and any surplus yield beyond what is required for local wants goes almost entirely to England. No exotic seed is imported, the native being esteemed to be superior. In weight it averages about 58 lbs. per imperial bushel. Stored in Tripoli it rapidly becomes deteriorated through weevils and flies, but in warehouses in England it preserves its good condition for two or three years. In the district of Zleiten, however, it is stored in wells sunk in rock, and keeps good for several years, a custom which does not obtain elsewhere, owing to the sandy character of the soil.

In a country producing, as I have said, but four good harvests out of ten, it is difficult to estimate the amount of an average fair crop. Efforts to that end have been made on the basis of the Government tithes levied, but that is misleading from the fact that such are admittedly far below what would under a more improved administration be actually levied, and secondly, that large quantities of the most fertile and productive land in the oasis and plains of Tripoli cultivated by the kol-oghlon, or feudal militia, numbering between 20,000 and 25,000 male adults pay no tithes, or indeed taxes of any kind, in return for their gratuitous services in case of need. It has been estimated that these exemptions from taxation cost the province over 70,000*l.* a year. Again, mosque property and religious foundations are similarly exempted, as also the numerous descendants of certain men renowned for exceptional piety.

After much inquiry and from the best information I have been able to obtain, the barley harvest varies, according to the amount and equal distribution of the rainfall, between 1,400,000 and 2,000,000 bushels, the former representing a fairly good harvest, and the latter a phenomenal one, occurring about once in 10 years. In bad years the yield falls as low as 475,000 bushels. The quantity required for seed purposes is about 100,000 bushels, and for local consumption 375,000 bushels. Taking an average fair crop at 1,400,000 bushels the comparative quantities produced in the principal barley districts would be as follows —

District.	Quantity.
	Bushels.
Jebel	320,000
Gharian	110,000
Adjelat	320,000
Urshefana	110,000
Zarvia	120,000
Zleiten	420,000
Total	1,400,000

During the last six years the quantities exported to England, with ports of shipment, and their values, were as follows :—

Year.	Quantity.						Value f.o.b.	Cost per Quarter f.o.b.
	Tripoli.	Khoms.	Zleiten.	Misurata.	Total.			
	Quarters.	Quarters.	Quarters.	Quarters	Quarters.	Bushels.	£	£ s. d.
1894 ...	17,110	1,684	19,890	13,207	51,881	415,048	46,000	0 17 8
1895 ...	...	...	...	...	...	...	...	...
1896 ...	21,942	...	14,374	14,521	50,837	406,696	52,000	1 0 0 to 1 1 0
1897 ...	...	...	...	...	...	...	...	...
1898 ...	10,750	1,290	3,080	1,257	16,377	131,016	18,000	1 1 5
1899 ...	13,341	2,287	3,879	800	20,307	162,456	24,000	1 3 8

Commercial operations connected with the export of barley are wholly of a speculative nature, and during the last six years have, I believe, seldom resulted in profit.

Wheat

Little wheat is cultivated compared with barley. To the east of Tripoli in the districts of Zleiten, Misurata, Orfella, and Messalata, the people of which are essentially barley consumers, barely one-tenth of the cereal area is planted with wheat.

To the north and west of Tripoli the proportion is greater, but barely one-fourth, owing to the proximity of towns, the chief of which is Tripoli, and which are large consumers of wheaten flour. Both hard and soft wheat are produced, the former principally to the west of Tripoli. The extent of land suitable for its cultivation is restricted, a richer soil being required; while barley straw is used as fodder for animals, wheaten straw is valueless, and the wheat harvest ripens a month later than that of barley. During the past 10 years wheaten flour and semolina to the value of 30,000*l.* to 40,000*l.* a year have been imported from France and Italy, chiefly the latter country, and importations seem ever on the increase. Little foreign wheat has been imported of late years, there being no demand in face of the large imports of flour. Even flour for the use of the troops is brought from Constantinople. The preference thus apparently given to foreign flour is largely caused by the poverty of the majority of the inhabitants of Tripoli and the smaller towns, who, unable out of their small and precarious daily earnings to lay in even the smallest stock of wheat,

content themselves with buying every day such quantities of foreign flour as many suffice for their daily wants.

Millet and guinea corn.

Millet and guinea corn enter largely into the food of the people especially among the nomad agricultural classes, and are much cultivated. None is exported. Millet is generally about double the price of barley, and guinea corn a little less. Both are far more sustaining than either barley or wheat. In some parts bread is made with guinea corn, while both are equally largely consumed in the preparation of bazine and cuscusso, the national dishes. Cuscusso, however, is made with millet and barley flour mixed. Both are annual crops.

Dates.

The number of date palms in the province is computed at 2,000,000, and is the most important of all trees, all its component parts serving usefully in some way or another; the fruit for food, the leaves for mats and hut coverings, the wood for building and fuel, the fibre for baskets and ropes, the juice for drinking, and finally the stones made into a paste are given as food to animals. A certain quantity of date-stones is exported to Italy to adulterate coffee.

Date paste also forms an article of export to Egypt and Turkey. The date enters largely into the food of the people, especially during poor cereal harvests when its price is governed by that of barley. The tribes of the Fezzan consume large quantities of the Tripoli dates as their principal food, and every autumn caravans arrive from the interior, especially at Misurata, for the purposes of purchase. Animals are fed on them in the oases of the interior. A large consumption of lagbi, or palm wine, the juice of the tree, takes place in the country among all classes, religious prejudices not applying to it as an intoxicant; the season is from May to October. An incision is made near the top of the tree and the sap allowed to flow into an earthenware jar which is attached and changed twice a day. The flow continues nearly three months but not always in the same quantity. A good tree produces lagbi to the value of 2*s.* to 2*s.* 6*d.* a day, but its extraction causes it to produce no fruit for the next two or three years. The consumption, however, is great, and little labour is required. The total annual value is about 3,200*l.*, the tax being 20*s.* per tree excised.

When taken fresh from the tree it resembles milk and has a sweet taste, but later on becomes sour. A small quantity of spirit called "bokha" is distilled from the date, and is consumed locally. It is an intoxicant and somewhat resembles arrack. Efforts to export dates to Europe for distilling purposes have failed owing to heavy import duties. The export of dates to Bengazi, Egypt, and Turkey varies between 700*l.* and 2,000*l.*, according to good or bad seasons, and chiefly from Zleiten, Misurata, and Tuarga. Plantations are rare, except in those parts which are exempt from taxation.

Olives.

Next to cereals the olive crop is the most important. The increase of plantations is restricted by the same causes as those of dates. New trees are seldom planted and the old trees yield oil of a secondary quality.

The production suffices for the consumption of the country; none is now imported and very little exported, barely 7,000*l.* in value yearly. The fluctuations in yield of the olive crop are great between 1,600,000 bushels in very good years, and 300,000 bushels in exceptionally bad ones, but are said to be less so than in Italy. The occurrence of a good olive crop is said to be almost invariably attended by a deficient date harvest, and vice versâ, owing to the variation and duration of certain autumnal winds when approaching maturity. The district of Mesellata, near Khoms, is renowned for the quality and yield of its oil, a bushel of olives giving 3½ to 4 gallons, against 2½ to 3 gallons in the Gharian district. The total value of an ordinary olive crop has been estimated at 100,000*l.* based upon the actual tithes received, or taking into account the lands exempted from taxation at about 150,000*l.*, but is supposed to be much more owing to inefficient registration for taxation purposes, and other courses incidental to it.

The oil-presses employed are those of primitive times, and no attempts have been made to introduce European methods. In consequence the olives retain after pressure a certain quantity of inferior oil which would otherwise be utilised, and the remainder used as manure. Of this olive-oil residuum about 3,000 tons are exported in good years to Italy and France of the value of about 3,200*l.*, or in ordinary years about 1,600*l.*, costing 28*s.* per ton, with 8 per cent. of oil guaranteed.

Of olive oil, exports to the value of about 7,000*l.* annually take place to France and Italy.

Silk, and mulberry trees.

Although the mulberry tree is grown in the gardens of the oases of Tripoli no serious attempt has been made to produce silk; a few ounces of seed have been cultivated by amateurs, but with no fair results, and it may be feared that, in view of the frequent occurrence of the gibli, or hot desert winds, success would never attend efforts on a large scale.

Oranges and lemons.

Oranges and lemons are largely produced and are of excellent quality, and both cultivation and export are extending. Besides much export to Tunis and Malta, and at certain seasons to other parts of the Levant, a very large local consumption takes place. Shipped in bulk, without wrappers, they do not stand long sea voyages, but private shipments to England, plucked carefully, and wrapped in paper, have been attended with the best results, and this after a voyage of 15 to 20 days. Blood oranges are common. Bitter oranges abound, and an exportation of the peel is made to England and Germany for the manufacture of liqueurs and essences. Formerly this was done through Italy, but now goes direct. Peel for Germany is not pared but simply cut in quarters; that for England is cut in strips, or thin ribbons, by a small machine or knife especially adapted.

The export to Germany is 100 cwts., valued at about 200*l.*, annually; that to England about 1,760 cwts., costing about 5*d.* per lb. more on account of special manipulation. Besides orange peel, orange flower water is made and held in high esteem in

Turkey, Algeria, and Tunis, to which countries it is exported to the value of about 800*l.* annually.

The value of oranges and lemons annually exported varies between 4,000*l.* and 6,000*l.*

Apples and apricots.

Apples and apricots are largely exported to Malta, and with increased steam communication would attain larger proportion. Apricot paste is also exported to eastern countries.

Grape.

The grape is cultivated everywhere, but more especially in the neighbourhood of Jefara and Tarhuna. The bunches are sometimes enormous weighing over 11 lbs., but generally approach 3 lbs. Both white and black are produced, the former, clear in colour and excellent in taste, resembling Marsala.

Little care is bestowed on cultivation but the yield is good. Little wine is made although containing good alcoholic strength, between 14 and 17 degrees, and thus capable of long keeping. The little made by native Jews, Maltese and Italians keeps for several years.

A kind of black grape gives a strong table wine of good flavour, very like the red wine of Sicily. Cultivation is capable of extension, and sufficient wine is made to compete with the Sicilian and Greek wines now imported and charged with alcohol to withstand the climate.

Vegetables.

Vegetables are grown in abundance, and are of good quality, especially potatoes, the cultivation and export of which have been of late years largely extended, exports to the value of about 1,000*l.* annually taking place.

Exotic seed, with the exception of English seed potatoes imported yearly from Malta, is not used, the outcome degenerating after the first crop. The general poverty both of producers and consumers militate against attempts to introduce foreign varieties.

Celery and artichokes are produced by a few amateurs, but are neglected by the native gardeners. Both vegetables and fruit are grown where irrigation from wells is practicable, and the spade and hoe largely used with stable manure.

Green fodder for cattle, horses and camels.

Lucerne, or "safsa," is very largely cultivated, and three or four crops are cut annually off the same field. Guinea corn, or "ksub," is also often cut green before maturity for fodder, and then receives the name of "shtell," and produces one crop a year. Millet, or "bishna," is treated in the same way.

Madder-root tops, or "fooa," are given as green food to camels. Barley is sometimes used in a green state especially when sown with lucerne.

Seeds.

Coriander, or "kusbur," and Cretan fennel, or "helbe," are grown, and used as food, as salads and condiments.

Vegetable dyes.

Before the introduction of aniline colours madder roots were extensively cultivated, and largely exported. Of late years the production has again increased, notably in the districts of Misurata, and besides local consumption by dyers quantities are being exported to Egypt.

Henné is grown in the gardens of Tripoli and exported to

Tunisia, Algeria, Egypt, and Turkey. It produces three crops a year, and the roots reproduce the plant without care or expense to the cultivator. It is largely used in oriental countries by ladies to stain the hands and feet, and sometimes the hair, and as a supposed preservative against certain maladies. The value of the present export is between 8,000*l.* and 12,500*l.* yearly, and appears to be increasing.

Wool. The production of wool depends on the rainfall. In bad years the Arab, fearing starvation of his flocks through lack of pasturage, sells his sheep and lambs for anything he can get. In such years the clip suffices only for local wants, but in ordinary seasons an export of the value of at least 4,000*l.* may be calculated upon, and goes chiefly to Marseilles.

Skins and hides. Owing to the preference given by the natives to lamb rather than mutton as an article of food the export of lambskins is important, and appears to be on the increase. The large number of oxen slaughtered for the use of the troops also renders a certain amount of ox-hides available for export. In ordinary years the following average local consumption and export takes place :—

Articles.	To—	Number.	Value.
			£
Lamb, sheep, goatskins ..	France ..	140,000	7,840
	Italy ..	10,000	240
Taken for local consumption ..	..	52,000	2,080
	Greece ..	15,000	720
Ox hides	France ..	10,000	480
	Italy ..	10,000	480
Taken for local consumption ..	..	5,000	240
Total	..	242,000	12,080

Butter. No cheese is produced but butter made from sheep's milk is largely consumed for cooking purposes, and exported to oriental countries to the approximate value of about 2,300*l.*, the quantity varying according to the rainfall acting on the increase or diminution of pasturage and flocks. Cows give little milk, many being used in ploughing and for water drawing purposes. Goat's milk is far preferred to cow's milk for drinking.

Eggs. Exports of eggs began in 1889 and are increasing. Formerly Tunis was the principal consumer, but in consequence of protective tariffs this trade has ceased, and Malta and Marseilles take the bulk to the average annual value of between 10,000*l.* and 12,000*l.*

Cattle, sheep and goats. Cattle are small in size, but beef is generally of good quality. Cows, however, give little milk owing to insufficient and inappropriate food. The chief breeders of cattle and sheep and butter producers are the tribes of Zintan, Jebel, Sert, Orfella, and the Weled Bu Sef. Exports, chiefly cattle, all of which goes to Malta, depend on the wants of that island, its garrison and fleet, and the state of the Tripoli pasturages. When the latter are poor owing

to deficient rainfall exports are large. Prior to 1889 little cattle went to Malta. Since then the yearly values of exports have fluctuated between 16,000*l.* and 40,000*l.*, averaging about 24,000*l.* The export value of bullocks as estimated by the Tripoli custom-house is 64*s.* per head; of calves 10*s.*; the cost of freight to Malta by steamer is 4*s.* per head. Goats are very numerous, and are the chief milk givers. The breed is a mixed one of Berber and Maltese.

Horses. The export of horses has of late been prohibited owing to the necessity of remounts for the cavalry. Formerly a few hundred were sent yearly to Malta and Sicily, the latter by sailing craft, costing between 16*l.* for the best, to 4*l.* to 6*l.* for ordinary animals, which left a profit of about 50 per cent. They are of the Berber race, bony, and of low stature. They are fed on barley, chopped straw, and green fodder. Oats are unknown here.

Camels. The tribes I have mentioned as large cattle breeders are also extensive camel raisers. The total number in the vilayet has been variously estimated at 250,000 and 400,000, but no means exist of verifying these figures. In Tripoli prices vary between 2*l.* and 6*l.* per head.

The male camel is chiefly used for ploughing and transport, the female for breeding purposes. A breeding stud possesses about four males to every 100 females. The mahari, or riding camel of the interior, is seldom met with in the vilayet, the natives of which appear to make little distinction between it and the baggage camel. They are fed on barley, and sometimes on dates, with chopped straw, and in the vicinity of towns, on green fodder, with such herbage as they can pick up. In Tripoli, the hire of a camel, with food and attendant, for a journey of 20 to 30 days, costs between 1*s.* 10*d.* and 2*s.* per day.

Mules and donkeys. The mule is practically unknown in this country. Asses are abundant and largely used for transport and riding purposes. Prices vary from 16*s.* to 8*l.*, according to size; the ordinary small donkey costing as low as 8*s.* There are no special breeders or attempts to improve the race by the introduction of good males. None are exported.

Poultry. Fowls are abundant, and, when properly fed and cared for, good. Turkeys, geese, and ducks are rare, and dear.

Esparto grass. Esparto grass although hardly an article of agricultural produce, it being a fibrous plant growing wild, incapable of cultivation or reproduction, in the districts around Tripoli, Khoms, and Zleiten, to a distance inland of two to four days' journey, its collection, transport, and sale give employment and pecuniary assistance to the agricultural classes during slack times and bad harvests. Since 1868 when its export to England for paper-making purposes first began large quantities have been yearly exported. Between 1888 and 1897 the average yearly export was 46,019 tons of the value of 128,320*l.* In 1899, 45,931 tons of the value of 96,400*l.* were exported, showing the decreased value in the English market consequent on the larger use of wood-pulp in paper manufacture.

Although it has now to be sought for further afield, entailing

longer journeys to the coast with increased labour and cost of transport, the quantities collected show little diminution, showing the assistance it renders to the people, despite the small return they now gain by it when compared with former times when the fibre fetched 12*l.* per ton in England, now reduced to 3*l.* Last year the price locally per ton after payment of expenses of collection, transport, and Government dues was 2*l.* 2*s.*

Mats.

No house exists without mats. Often the mat is the only article of furniture of the poor Arab, and on this he sleeps. The floors of mosques are covered with them, and frequently renewed. The consumption being so large the manufacture is equally so, and permits an annual exportation of 7,000*l.* or 8,000*l.* to Bengazi, Egypt, Smyrna, and Constantinople where they are in great demand.

The smaller mats called "Misurata," but really made at Taourga in its vicinity, are 7 feet by 9 feet, often with coloured designs. They are woven with a weft of esparto grass, and warp of a tough kind of rushes which grows abundantly in the neighbouring marshes. Tripoli mats are woven with similar rushes but with a weft of twine, are much larger, and, unless especially ordered, without designs. They cost about 8*s.* to 10*s.* each, with a medium size of about 116 square feet. They are exported in huge rolls of 20 mats each.

Red pepper

Red pepper is largely cultivated and as largely consumed by the natives in their daily food. Formerly a considerable export to Tunis took place, but of late years it has nearly ceased owing to the plant having been introduced into that country and high protective duties. The price now in Tripoli is about 6¾*d.* per bushel as against 15*d.* three or four years ago. Exports to Turkey still take place to the value of about 2,000*l.* yearly.

Tobacco.

Tobacco succeeds fairly well especially for snuff and chewing purposes, and its cultivation would be largely extended were it not for the monopoly enjoyed by the Tobacco Régie which controls its culture, and the sale to itself at a price fixed by the Régie. Notwithstanding these drawbacks there are about 130 cultivators, with 800 acres, producing about 1,000 cwts., valued at about 1,600*l.*

Natron.

Natron is brought by the Government for local consumption and sale in Tripoli from the lakes between Sokna and Murzûk, in the Fezzan. It is used in the preparation of certain kinds of snuff liked by some for the extra pungency it imparts. Native chewers of tobacco also use it for the same reason. Formerly only about 50 tons were imported annually by the authorities in order to sustain prices which according to quality ranged between 32*s.* and 8*s.* per cwt. Owing to the heavy cost of transport by camel on a journey of 20 to 30 days only the better qualities are brought. About two years ago a Governor-General calculating on a large increase of revenue imported about 300 tons with the result that prices fell one half, and the bulk is still in stock.

Exports to Tunis and Algeria take place to the value of about 1,100*l.* yearly. Owing to want of surveillance of the lakes there is

little doubt but that considerable contraband by land with Algeria, &c., takes place.

No search for minerals has ever been made in the vilayet although traces of coal are said to exist. The sulphur deposits near the head of the Gulf of Syrta are not worked, the little extracted being used by the Arabs for camel diseases, with the exception of a small cargo shipped at rare intervals in coasters for Syria, &c. The quality is said to be very inferior.

Taxes on agriculture, &c.

The taxes on agriculture, &c., are the verghi and tithes or 10 per cent. of the produce payable in kind.

Verghi.

The verghi or miri, as it is called by the Arabs, is a monetary contribution levied in proportion to the adult male population and wealth of the inhabitants, and the riches of the soil in each particular district. A commission which sat about 11 years ago fixed at a sum equal to 81,620*l.* the total amount of the verghi to be paid by the whole of the vilayet, apportioning to each district the annual amount due by it.

This assessment has not been changed, and stands as follows:—

	Amount.	
	Currency.	Sterling.
	Piastres.	£
Caïmakamlik of Adjilat	274,727	
„ Gharian	549,949	
„ Tarhouna	641,452	
„ Zarvia	775,035	
„ Orfella	429,533	
„ Tripoli	1,145,813	
Total for Sandjak of Tripoli ..	3,816,509	33,924
Caïmakamlik of Zleiten	478,521	
„ Misurata	786,117	
„ Sert	101,645	
„ Meselata	410,848	
„ Khoms	760,717	
Total for Sandjak of Khoms ..	2,537,848	22,559
Caïmakamlik of Fessato	405,733	
„ Ghadamés	191,492	
„ Naloot	236,707	
„ Ifrin	651,095	
„ Khod	202,617	
Total for Sandjak of Jebel Gharb..	1,687,644	15,002
„ „ Fezzan ..	1,140,216	10,135
Grand total for the Vilayet ..	9,182,217	81,620

This amount, however, has never been reached, the average for the last 7 years having been about 75,000*l.* Arrears, amounting to over 30,000*l.*, it is said, continue to be borne on the Govern-

ment books, but with no prospect of recovery. The assessment lists are drawn up in the following manner. All the principal persons or chiefs of each district are summoned before the local administrative council or commission especially named for the purpose, when enquiry is made, depositions taken, and examination made as to the material wealth of all interested. Thus obtained a list is drawn up of all living male adults with the wealth of each individual in cattle, camels, sheep, date and olive trees, and entered in the register, which entry is certified to as correct by the superior authority. The register, once completed, all those inscribed must pay, dead or alive, or even when fallen into extreme poverty. And even when owing to much mortality of men or animals, or the increased number of non-inscribed adults, it suits the majority to demand a revision of the register such is only done after much pressure and numerous petitions which are sometimes refused for personal reasons thus giving rise to disputes and enmities between families. Thus while for the levying of the tithes a special staff is sent by the Government, the verghi becomes a kind of subscription or tax fixed for each locality to which custom has given the force of law. Each caïmakam pays to Government the sum fixed as payable for his particular district, and which he encashes from the mudirs and sheikhs, these again in their turn recovering it from the adult males belonging to their individual tribe or circumscription. Naturally such taxes are not always paid punctually, especially by tribes and districts which have suffered from cattle mortality or drought. Other tribes again, those more inland and less under direct control, decline to pay, and on the approach of soldiers withdraw with their tents and possessions into the interior. On the other hand no one attempts to maintain that the total amount of such taxes actually levied enters the public Treasury. Inefficiency and a variety of circumstances preclude such belief. The basis upon which the verghi is levied in particular districts is as follows:—

DISTRICTS of the Mutessarifliks of Tripoli, Khoms, and the Fezzan.

	Amount.	
	Currency.	Sterling.
	Piastres.	*s.* *d.*
Personal tax on each adult male ..	20	3 6¼
Tax on each camel	20	3 6¼
„ every 10 sheep	20	3 6¼
„ „ 20 goats	20	3 6¼
„ „ 2 cows	20	3 6¼
„ each olive tree	2	0 4¼
„ „ date „	2	0 4¼

DISTRICTS of the Mutessariflik of Jebel el Gharb.

	Amount.	
	Currency.	Sterling.
	Piastres.	*s.* *d.*
Personal tax on each adult male ..	30	5 4
Tax on every 2 camels	30	5 4
„ „ 25 sheep	30	5 4
„ „ 25 goats	30	5 4
„ „ 4 cows	30	5 4
„ „ 10 olive trees	30	5 4
„ „ 20 date „	30	5 4

In a few districts, wells, used for irrigating orchards and groves, pay a tax equal to that of 10 olive or date trees. Horses, mules and asses pay no tax, nor do fruit trees, fruit, and vegetables.

Tithes. Among the various branches of revenue the tithe is certainly the most precarious, depending as it does on the rainfall. For the purpose of levying it the Grand Administrative Council of the vilayet appoints three persons for each district on the approach of the harvest, namely, a head collector, a valuer, and a scribe, paying them salaries varying between 2*l.* and 4*l.* per month according to the extent and riches of the district to which they are named.

On arrival they are assisted in their task by two members of the local administration and proceed to the valuation of the crops just prior to reaping, in the presence of the owner who seeks to minimise the quantity of grain on the land by every means in his power.

Speaking of these taxes of verghi, and ushr, or tithe, it is calculated that taking into account the inefficiency and deficiences of the present methods employed, and the total exemption from taxation enjoyed by such large quantities of the most fertile and cultivated land of the province, they are actually exacted on less than the half of the harvests or material taxable. These exemptions of taxation began in 1835 when the Turkish Government first came into possession of the country, and, in return for the favourable attitude adopted by the Kologlur tribes, descendants of Turkish settlers, towards them, promised to exempt the country at large from conscription, and these particular tribes inhabiting and cultivating the groves and gardens of the city of Tripoli and the plains around for many miles from taxation. These Kogherlich, or feudal militia, in return for such privileges are liable to be called out, if necessary, as an irregular force in defence of the country, free of all expense to the Government. At present they provide Government escorts, act as tax-collectors when difficulties arise, and as rural police in tribal disputes. The expenses incurred by them when sent on expeditions, for horses, equipment, and food, are borne collectively by the tribe or special district to which they belong, the sheikhs, or mudirs, of which levy them in pro-

portion upon all the members composing the said tribe or district.

The amounts levied during the past few years by Government under the heads of verghi and tithe, and including the tax on esparto grass, have been as follows:—

Year.	Amount.	
	Verghi.	Tithes.
	£	£
1894	79,346	60,199
1895	68,137	30,021
1896	73,563	27,001
1897	74,150	48,301
1898	68,710	26,908
1899	75,990	21,464

The fluctuations of the tithes are to be accounted for by the success, or partial failure, of the cereal crops for the time being. The harvests of 1894 were, as will be seen, phenomenal, and permitted an increased payment of the verghi tax, the comparatively small fluctuations of which even in years of drought show the unremitting pressure applied in its collection.

Exports.

The following are the highest and lowest values of articles of agricultural and other natural products of the soil exported yearly during the last 10 years:—

Articles.	Countries to which Exported.	Value.	
		Lowest.	Highest.
		£	£
Esparto grass	England	72,000	148,000
Cattle	Malta	16,000	40,000
Eggs	Malta, Tunis, Marseilles ..	7,200	12,600
Mats, grass and reed ..	Bengazi, Egypt, Turkey ..	3,000	8,400
Henna	Turkey, Egypt, Tunis, Algiers	3,200	12,500
Wool, skins, and hides ..	United States, Italy, France	4,000	9,700
Olive-oil	Italy and France	2,200	7,000
Oranges and lemons ..	Tunis, Algeria, Malta ..	2,800	6,000
Red pepper	Turkey, Tunis, Algeria ..	720	3,880
Butter	Bengazi and Turkey ..	1,200	3,680
Madder roots	Egypt	1,290	3,500
Olive-oil residue	Italy and France	1,600	3,200
Dates	Bengazi and Turkey ..	700	2,000
Potatoes	Malta and Tunis	810	1,280
Gum arabica	France and Italy	150	250
Orange flower water ..	Italy, Turkey, France ..	480	800
„ peel	England and Germany ..	240	700
Bones, horns, and hoofs ..	Italy and France	120	420
Apricots and apples ..	Malta and Tunis	190	320
Date-stones	Italy	170	280
Natron and other articles	Tunis and other countries ..	6,400	10,600
	Total	124,470	275,110

NOTE.—Average annual value of exports during 10 years, 200,000*l.*

It will be seen by the above list that the three articles, esparto, cattle, and eggs, hold the chief places among exports, and that deducting their value the remainder is little worthy of notice. With regard to the first, the most important, the longer distances it will henceforth have to be sought for, collected, and brought to the coast, will raise the question whether, in a country where the camel is the only means of transport, the article can long bear such ever-increasing cost of transport.

Exports of cereals and breadstuffs do not figure in the above list for the reason that, taking one year with another, the country does not produce enough for its own consumption, as the following return of imports and exports during the last 14 years will show:—

Imports and exports of breadstuffs.

TABLE showing Value of Imports and Exports of Breadstuffs at Tripoli during the Years 1886–99.

Year.	Imports.			Total.	Exports.
	Wheat.	Barley.	Flour.		Barley.
	£	£	£	£	£
1886	28,500	10,500	39,000	78,000	..
1887	9,500	74,000	54,000	137,500	..
1888	12,000	80,000	40,000	132,000	..
1889	7,500	4,700	40,000	52,200	..
1890	..	..	5,000	5,000	46,000
1891	3,800	7,000	7,500	18,300	57,750
1892	..	78,000	34,800	112,800	..
1893	12,500	22,900	35,200	70,600	6,000
1894	..	..	20,000	20,000	44,100
1895	11,500	20,500	45,000	77,000	4,750
1896	..	..	22,000	22,000	45,700
1897	..	13,000	38,000	51,000	6,700
1898	..	..	45,000	45,000	18,000
1899	..	..	43,000	43,000	19,500
Total ..	85,300	310,600	468,500	864,400	248,500

	£
Average yearly imports of breadstuffs during 14 years ..	61,743
„ exports „ „ ..	17,750
Excess of barley imports over exports „ ..	62,100

I should here mention that except during years of exceptional scarcity, little or no flour finds its way out of the city of Tripoli into the interior, or to the coast towns. Even the barley cultivator, who raises besides a little wheat, seldom consumes the latter, selling the greater part and reserving for himself a small portion for making cuscusso on special occasions, and for treating guests, &c., the Arab preferring barley to wheaten flour. The flour, which is imported from Genoa and Marseilles, is of various qualities and prices, the lowest grades being, it is alleged, hardly fit for human food. Last year seizures were made by the health

authorities on this ground, but owing to the non-existence of an expert analyst nothing came of them.

As will be seen, out of 14 years' consecutive harvests those only of four years were sufficiently good to admit of export to any appreciable extent. The exports in 1898–99, it should be observed, were made by merchants under contract to deliver, and who consequently were obliged to purchase at the ruinously high prices which deficient harvests caused to prevail.

It will also be apparent that during the same period of 14 years the country was obliged to import on an average about 44,000*l.* a year of breadstuffs to make up its deficiencies; and that in a country, the prosperity of which depends on its barley harvest, the chief food of the people, the imports of barley alone exceeded the exports by 62,000*l.* during the same period.

The total imports and exports at Tripoli during the last 10 years have averaged between 300,000*l.* and 400,000*l.* yearly, the value of the exports of ivory, feathers, and skins accounting for the difference between the exports of the natural products of the vilayet, say, 200,000*l.*, and the total amount of exports.

It can, however, be hardly doubted that the caravan trade of Tripoli is doomed in the near future to diminution, and probably ultimate extinction, by reason of British, German, and French commercial enterprise in the south availing of the additional facilities for trade presented by the waterways of the Niger and Benué. In that case the province of Tripoli will be reduced to, and dependent upon, the natural resources of its soil, the value, nature, and extent of which I have attempted to arrive at in the present report.

Shortly then, taking the average value of exports one year with another, at 200,000*l.* a year, and deducting 44,000*l.* a year spent in importing the breadstuffs necessary for its subsistence, it would follow that the vilayet of Tripoli with a population approaching 1,000,000, and an area of some 410,000 square miles, has a productive power, under present circumstances and condition of things, in excess of its own consumption of about 160,000*l.* only, and that more than 50 per cent. of such excess is represented by a weed, growing wild, incapable of reproduction, and, therefore, destined in the future to ultimate extinction.

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Report on Shipping and Shipbuilding on the American Lakes by Mr. T. Erskine, British Vice-Consul at Chicago.

(Received at Foreign Office, April 30, 1900.)

The volume of business carried on by the inland seas of Canada and the United States is annually increasing, and in the year 1900 promises to exceed that of any previous year.

Chicago has two harbours, the Chicago and Calumet Rivers, where in the past year the following cargoes were handled:—

Description.		Quantity.	Value.
			£
Iron ore	Tons	2,650,000	..
Coal	„	1,900,000	..
Lumber	Feet	12,722,130	..
Laths	Bundles ..	9,180,900	..
Merchandise	..	..	2,829,400
Passengers	Number ..	1,000,000	..

In all these different lines of business an increase of from 5 to 20 per cent. is expected in the coming year, and as the quantity of freight carried into Chicago by foreign vessels is almost nil, shipowners are looking forward to a most prosperous season.

Last year Chicago shipped by rail and lake 221,972,000 bushels of grain, and 5,421,000 barrels of flour, and of this only about 12 per cent. was shipped to Canadian ports, but with the opening of the improved Welland Canal giving a direct passage to the Atlantic for vessels of about 1,500 tons, it is expected that an increased quantity of grain will be shipped to Montreal and there loaded on larger vessels, and it is also thought possible that vessels may find it profitable to bring merchandise direct to the Lake ports and return to Liverpool loaded with grain and flour.

The Canadian ports are now in a position to offer rates competing with the Erie Canal to New York, and this is shown by the agitation now being carried on, headed by the Governor of New York, Mr. Roosvelt, for the expenditure of the enormous sum of 60,000,000 dol. in enlarging and improving the canal from Buffalo to New York, to enable large barges to run from the Lake ports

to New York and tranship their freight direct to the ocean vessels, on the plea that unless this is done New York runs the risk of losing her grain trade. This canal is intended to be made to accommodate the large barges, and to be worked by electricity generated at Niagara.

There are so many ports on the American shores of the Lakes having a large trade with the other ports of the same class, and an export trade with Canada, and indirectly with Europe, that the entrances and clearances amount to an enormous total.

Navigation on the Lakes is open for about 240 days in the year, although many passenger steamers ply between the ports all through the winter, notwithstanding the ice, which at times becomes very troublesome.

The amount of work that can be got out of one these Lake steamers is shown by the fact that the ss. "Andrew Carnegie" travelled in the year of 240 days a distance of 42,027 miles.

The Welland Canal, it is thought, may bring some British vessels into the Lakes, and if successful, may lead to a big trade, and a consideration of the conditions may be of interest to the owners of the class of vessel able to pass through the St. Lawrence River and the canals.

Canada has connected Georgian Bay with Montreal by rail, and the Canadians now advocate making a canal from Georgian Bay to the Ottawa River, giving a direct waterway which, while shortening the distance from Chicago and Duluth to Montreal by about 400 miles, would save the expenses of the Welland and other canals and the difficulties of the Upper St. Lawrence.

The only drawback to the Welland Canal, which it is hoped will not be found in the Georgian Bay Canal, if it is constructed, is that it was not planned on a broader scale as to dimensions, as the modern freighter can deliver to the railroads and Erie Canal three times as much grain as can be carried by a vessel of the St. Lawrence and Canal tonnage.

The first vessel to pass through the enlarged canals was the "Porto Rico," which made the trip from the Lakes to the Atlantic, where she is to engage in the Cuban trade, at the close of the 1899 navigation season. The "Porto Rico" is 220 feet in length, 32 feet beam, and 21 feet depth of hold, with 8 feet between decks, and made the passage safely.

The "Mae," which was also built on the Lakes for the same trade, is a vessel of 2,100 tons gross, 263 feet over all, 42 feet beam, and loaded draft 19 feet, and being ready for delivery before the canals were completed, was taken over the rapids in the St. Lawrence and suffered considerably from the damage done to her bottom during the passage.

Until this canal was completed, vessels of any size making the trip to the Atlantic seaboard from the Lakes had to be cut in two in the lakes and rejoined at Montreal.

The trade opened by the canal, to which the attention of British shipowners is called, is for vessels which will pass through the canal locks, which are of the following dimensions: length,

270 feet; width, 45 feet; and 14 feet depth, and which will trade either direct with ports in the United Kingdom or carry their freight to Montreal and there transfer it to ocean steamers, and the extent of this trade will depend upon whether, with economy in coal, &c., British vessels can compete with the large freighters which carry the grain for the railroads to New York.

There are now running on the Lakes 14 vessels, which carry 7,000 tons of grain on each trip, and vessels have been run most economically, some having, it is claimed, been able to carry 1 ton of cargo one mile at the rate of ·03 lb of coal, and by these vessels towing one or two very large barges, this consumption is reduced by about one-half; thus last year one steam vessel, carrying 8,000 tons of cargo, towing two barges each almost as heavily laden, moved 20,000 tons of freight down the lakes at an average speed of over 10 miles an hour.

American vessels, already built or building, of the canal size will run through to Montreal, carrying about 3,000 tons of grain, which they will transfer at that port to Atlantic steamers and British vessels should certainly be able to have a share of this business.

That British shipping does not have its proper share of this trade is shown by the fact that while there were 161 vessels entered at Chicago and South Chicago in 1899 from Canada, only 12 of these were British, the rest being American.

The distance from New York to Liverpool is 3,053 miles, while from Quebec it is only 2,600 miles, and the distance from Quebec to Chicago, the furthest port on the lakes, is 1,400 miles.

The coasting trade between American ports on the Lakes, which is, of course, entirely in American vessels, is enormous, and is said to be most remunerative, especially in the passenger and ore carrying trade.

The principal imports from Canadian ports in 1899 were lumber, 12,722,370 feet, of which 6,845,583 feet was dressed, and therefore liable to duty, and 9,180,900 bundles of laths, while only 10 packages of merchandise were entered at the custom-house.

In 1892, 1893, and 1894 a Norwegian vessel of about 350 tons entered at Chicago, having made the voyage from Europe with fish, but since 1894 no foreign vessel has entered at the Lake ports but British (Canadian) vessels.

The direct imports to Chicago in 1899 were valued at 2,824,282*l.*, and of this amount Great Britain is credited with 653,546*l.*, nearly all of which must have come by Atlantic ports of the United States, and then by rail, or from American ports on the Lakes, and, of course, does not take into account importations cleared at the New York Custom-house and then sent on to Chicago.

The following schedule will show what were the principal imports to Chicago in 1899, and the amount entered at the custom-house as having come direct from the United Kingdom:—

DIRECT Imports to Chicago, 1899.

Articles.	Total Value.	From the United Kingdom.	From Canada.
	£	£	Cases.
Articles free	393,703	61,738	..
Books, music, &c.	6,919	3,158	..
Brushes	7,174	2,129	..
Chemicals	10,983	7,837	..
China	153,518	89,258	..
Clocks, watches	23,717	3,799	..
Diamonds, &c.	43,536	4,687	..
Dry goods	1,007,506	..	..
Cotton	..	116,694	..
Fibres	..	223,309	..
Silk	..	12,375	..
Wool	..	27,495	
Fish	55,416	1,508	7,742
Fruits, nuts	76,374	4,622	4,538
Furs	21,055	12,520	..
Iron	10,091	10,091	..
Leather	129,212	3,964	..
Lumber*	24,600	..	..
Metal	36,309	3,958	..
Paper	21,899	5,711	..
Salt	18,906	18,904	..
Seeds	9,577	1,636	..
Spirits, wines	95,517	20,169	..
Tea	366,364	17,321	..
Tin-plate	18,129	13,918	..
Other articles	498,578	48,685	..

* All from Canada.

The exports from Chicago consist chiefly of grain, flour, dressed lumber, and some ironwork.

A schedule of the shipment of breadstuffs from the different ports on the lake will show the amount of the trade, and as it is claimed that over 80 per cent. passed last year through the American canal it would seem that there was an opening for British vessels.

Annex A.—EXPORTS of Breadstuffs from United States Ports during the Year 1899.

Port.	Quantity.									Value.
	Barley.	Corn.	Cornmeal.	Oats.	Oatmeal.	Rye.	Wheat.	Flour.	Mill-stuffs.	Not Divided.
	Bushels.	Bushels.	Bushels.	Bushels.	Barrels.	Bushels.	Bushels.	Barrels.	Sacks.	£
Chicago*	2,800,992	62,568,630	12,198	16,677,756.	21,257	889,551	5,288,426	1,600,122	1,477,328	..
Port Huron ..	..	..	..	..	..	..	..	..	..	251,707
Detroit	..	..	..	..	..	..	..	..	..	364,464
Toledo—			Tons.							
Coastwise ..	..	3,243,289	569,698	3,000	..	..	5,664,528	121,305	..	..
Foreign	..	1,024,179	..	..	..	..	24,500	53,458	..	..
Duluth	..	..	..	..	..	..	..	..	..	1,296,768†
									Tons.	
West Superior‡ ..	..	1,988,795	..	..	..	18,000	3,838,905	171,695	3,343	..
		Tons.		Tons.	Tons.		Tons.			
Cleveland	..	51,433	15	14,870	43	..	80,745	..	..	..
Grandhaven ..	..	..	..	..	..	..	..	..	..	2,962
		Bushels.					Bushels.			
Marquette	..	1,966,858	..	..	..	18,000	4,423,862	607,477	3,782	..
Ogdensburg§ ..	..	..	..	..	..	..	..	..	..	106,242
			Bushels.	Bushels.	Barrels.				Bushels.	
Atlantic ports ..	1,043,220	132,933,036	766,531	28,290,781	288,997	9,726,633	82,043,824	14,274,421	2,562,025	..
Gulf ports	..	19,673,181	6,766	605,561	90	17,500	28,131,889	736,876	198,275	..

* Exports lower than in any year since 1895.

‡ Flax, 315,000 bushels.

† Coastwise, 771,744*l.*; foreign, 525,024*l.*

§ In 1897 the export of breadstuff was 385,372*l.*

The problem, therefore, before the British shipowner is whether he can, with vessels drawing 14 feet of water, compete with the large American freighter and the railways by bringing merchandise from the United Kingdom direct to Chicago and other lake ports, and returning laden with grain.

The following may be of some assistance in placing the expenses clearly before the owner. A vessel could carry enough cargo to Montreal to enable her to pass through the canals and there load down to her sea-going water-line, and in this way vessels of greater draft but of the proper length and breadth could be used in the trade; it would be necessary to have a pilot on board from Quebec whose remuneration would not exceed 1*l.* per day; the question of extra insurance rates on account of the more northerly latitude at which the vessels would cross the Atlantic, and because of their being navigated on an inland sea would also require adjustment, although the lakes are admirably lighted and buoyed; vessels would have to coal at their lake port, the price of steam coal at Chicago is at present about 10*s.* per ton; the custom-house have no charges for entering and clearing, but there is a tonnage tax which runs up to 3*d.* per ton, according to the country from which the vessel arrives, but is not allowed to exceed 1*s.* 3*d.* per annum for vessels continually trading; no light dues; the expense of loading and unloading is from 1*s.* to 1*s.* 6*d.* per hour except lumber, when the loading charge is about 2*s.* per hour; grain in bulk is loaded at so much the 1,000 bushels which varies according to the ease with which the individual vessel can be loaded; towing in the rivers can be placed at about 10*l.*; the docks belong to individual companies; there are at the present time no crimps or sailor boarding houses, but if the foreign trade should grow these trades would soon spring up.

Sailor and fireman wages are very good in Chicago. The sailors have a union to which over 90 per cent. belong, and 95 per cent. of them are Scandinavians; wages run from 5*s.* upwards per day, but the men are not paid when the ships are in port, and if there were any desertions this rate would have to be paid on engaging new men; ships could engage men for the run to be discharged at Montreal; firemen receive up to 7*l.* 10*s.* per month, and deck hands 4*l.*; food on the lake ships, sailing and steam, is very good.

British vessels might not lose as many men in this trade as might be expected as desertions are not encouraged by the regulation, which, however, is not always adhered to, that none but American citizens can be employed on American vessels trading on the lakes.

The steamship men as yet have no union organisation, but an attempt is now being made to start in this direction, which, however, is not likely to affect the wages at present being paid.

There now seems to be an opening for British ships to get a share of this business which now goes viâ New York, and thence to European ports.

Buffalo, where most of this trade is transhipped either to

barges to pass through the Erie Canal or to the railroads, received the following shipments by the lake in 1899:—

Articles.		Quantity.
Meal	Barrels	310,255
Feed	Sacks	1,610,417
Corn	Bushels	29,665,255
Barley	„	8,712,683
Flax seed	„	1,213,141
Tallow	Tierces	18,801
Lard	„	397,640
Laths	Mille	7,888
Railroad sleepers	„	199
Iron ore	Tons	288,505
Pig-iron	„	23,804
Wool	Sacks	76,200
Flour	Barrels	11,496,224
Wheat	Bushels	49,748,889
Oats	„	15 306,771
Rye	„	522,194
Malt	Bags	569,913
Pork	Barrels	37,664
Lumber	Mille	250,036
Shingles	„	105,321
Oilcake	Sacks	111,488
Lead	Tons	405.295
Copper	„	88,828
Spelter	Plates	450,305

And as most of this is for Europe the magnitude of the trade which might be opened up is apparent.

The Collectors of Customs at the different ports have kindly furnished me with the information as to tonnage, clearances, exports, &c.

On March 18, 1900, there was afloat in the harbours of Chicago 4,218,795 bushels of grain, of which 85,313 bushels was wheat, 3,584,277 bushels corn, and 549,205 bushels oats, nearly all of which is consigned to Buffalo for transhipment to New York. There was also at that time 33,052,201 bushels of grain in the elevators at Chicago, but the vessel owners are disinclined to accept grain charters at present as they can do better in the ore carrying trade.

REGISTERED Tonnage on the Lakes.

Port.	Number of Vessels.	Tons.
Chicago	284	84,295
Detroit	..	149,059
Erie	..	34,478
Cleveland	326	336,769
Grandhaven	..	43,792
Buffalo	226	190,317
Port Huron	378	157,105
Toledo	72	21,108
Duluth	..	164,536
Marquette	..	40,725
Sandusky	84	34,047
Niagara Falls	21	13,949

The total fleet of the great lakes is said to be, all told, 3,435 vessels whose aggregate registered tonnage is 4,668,350 tons. 1,210 of these are steam vessels, 72 of them in the passenger trade. The remainder are schooners, tow-barges, and lake tugs. These figures do not include harbour tugs, steam yachts, or small excursion boats, nor the Canadian vessels trading on the lakes which, if added, would increase the gross tonnage to about 6,000,000 tons.

This fleet carries as regular crews 51,525 men, all told, besides giving employment to nearly 150,000 men as coal, ore, and grain shovellers, stevedores, dock hands, and others.

The fleet, called the Inter-ocean fleet, consisting of 1,087 vessels pass through the Straits of Mackinaw and Detroit River, carrying immense cargoes of grain.

ENTRANCES.

Port.	Coasting.		Foreign.		British.
	Number of Vessels.	Tons.	Number of Vessels.	Tons.	Number of Vessels.
Chicago	6,706	4,322,226	149	203,347	12
South Chicago ..	1,141	1,749,416	12	6,366	..
Michigan City ..	248	72,360	..	..	..
Port Huron ..	2,446	769,149	294	..	294
Detroit	3,905	1,175,221	532	108,221	564
Toledo	2,419	1,422,658	..	..	95
Cleveland ..	6,538	8,364,464	666	466,795	208
Grandhaven ..	8,284	..	..	..	..
Ogdensburg ..	1,007	111,011	..	..	..
Sandusky.. ..	..	383,754	..	..	100

CLEARANCES.

Port.	Coasting.		Foreign.	
	Number of Vessels.	Tons.	Number of Vessels.	Tons.
Chicago..	6,711	4,296,203	273	286,618
South Chicago.. ..	1,082	1,672,726	60	62,337
Michigan City	303	72,376	..	..
Port Huron	3,128	893,496	358	..
Toledo	2,417	1,428,214	..	..
Cleveland	6,279	8,240,538	930	652,261
Grandhaven	8,396		..	..
Ogdensburg	868	56,457	..	..
Sandusky	..	806,533	..	..

Chicago, although at present showing the largest amount of business of the western cities, is running great risk of losing some of her trade owing to the difficulties in the Chicago River where traffic is partly interfered with by the tunnels which are used by the street car lines, and the top of which are not deep enough to allow vessels of more than 16 feet draught to pass, and men interested in the shipping in Chicago fear that the neighbouring towns of Milwaukee and Manitowoc are getting trade that should come to Chicago.

Chicago still has one great advantage in being the only town where vessels bring in full cargoes.

Buffalo is to be provided with a channel of 20 feet depth, and if large vessels cannot get into Chicago River with full cargoes they will soon trade with a port where they can, and the trade will follow, factories will be built, and Chicago will find that by neglecting her opportunities she has allowed her rivals to build up their business at her expense.

Manitowoc is the outlet for an enormous territory, but cannot as yet take the big loads of imports, but it has a very promising future before it as a manufacturing centre.

Milwaukee has a great trade and good harbour facilities, and is making a strong bid for all trade, but no information could be obtained from that port.

COASTWISE Shipments from Chicago during 1899.

Articles.		Quantity.
Unclassified	Packages	3,287,706
Flour	Barrels	1,580,760
Wheat	Bushels	3,359,021
Corn	"	45,059,571
Oats	"	13,422,419
Flax-seed	"	1,779,043
Rye	"	854,551
Barley	"	2,003,552
Grass-seeds	Sacks	105,120
Mill-stuffs	"	1,455,059
Gluten-meal	"	211,203
Glucose	Barrels	183,993
Malt	Sacks	111,860
Oilcake	"	404,067
Spelter	Plates	326,367
Lead	Pigs	406,488
Bullion	Bars	47,616
Lard	Packages	77,438
"	Tierces	50,424
Coffee	Sacks	18,143
Tea	Chests	20,877
Sugar	Barrels	108,488
Syrup	"	27,269
Groceries	Packages	331,370
Canned goods	"	183,652
Soap	"	55,338
Starch	"	168,533
Cured meats	"	5,940
Pork	Barrels	30,647
Beef	"	1,160
Oatmeal	"	20,778
Cornmeal	"	10,328
Broom-corn	Bales	8,260
Manufactured iron	Tons	6,757
Vinegar	Barrels	12,505
White lead	Kegs	27,306
Hides	Bales	48,202
Leather	"	18,377
Tallow	Barrels	17,672
Liquors	"	4,569
Oils	"	9,290
Coal	Tons	853
Lumber	Mille	1,725
Wool and hair	Sacks	31,990
Steel rails	Tons	1,498
Wire rods	"	6,432
Angle bars	"	1,127
Rugs	Bales	9,331
Hay	Tons	611

COASTWISE Shipments from South Chicago during 1899.

Articles.		Quantity.
Unclassified	Packages	98,124
Flour	Barrels	600
Wheat	Bushels	630,000
Corn	„	8,507,419
Oats	„	2,543,672
Rye	„	10,000
Barley	„	513,000
Grass-seeds	Sacks	2,000
Gluten-meal	„	1,200
Lead	Pigs	700
Bricks	Tons	600
Glass	„	167
Paper	„	35
Nails	Kegs	2,483
Manufactured iron	Tons	1,712
Oils	Barrels	154,170
Coal	Tons	3,355
Lumber	Mille	190
Steel rails	Tons	26,238
Wire rods	„	2,241
Angle bars	„	1,493

COASTWISE Receipts at Chicago during 1899.

Articles.		Quantity.
Unclassified	Packages	3,854,556
Canned goods	„	769,444
Dry goods	„	199,703
Hardware	„	720,163
Groceries	„	679,316
Paper	„	367,199
Lumber	Mille	746,997
Shingles	„	110,600
Lath	„	20,666
Posts	Pieces	489,652
Ties	„	3,379,694
Poles	„	64,522
Wood	Cords	13,911
Bark	„	4,515
Green fruits	Packages	4,853,679
Coal	Tons	1,038,281
Cordage	Packages	123,474
Hemp, &c.	„	47,604
Boots and shoes	„	307,014
Salt	Barrels	861,381
Iron ore	Tons	62,231
Leather	Bales	88,928
Furniture	Pieces	103,700
Pig-iron	Tons	10,499
Drugs	Packages	115,212
Caustic soda	Drums	30,350
Sugar	Barrels	1,199,712
Syrup	„	9,079
Flour	„	64,085
Potatoes	Bushels	418,491
Cheese	Packages	22,322
Coffee	Sacks	188,478
Tea	Chests	1,280
Oils	Barrels	10,003
Peas	Sacks	166,186
Beans	„	16,450
Vinegar	Barrels	24,378
Fish	Tons	4,263
Nails	Kegs	260,755
Copper	Bars	23,599
Sulphur	Barrels	5,328
Dried fruits	Packages	29,867
Plaster	Barrels	38,563
Cement	„	628,055
Whiting	„	62,008
Asphalte	„	23,813
Stone	Tons	8,547
Soap	Boxes	84,014
Rice	Sacks	30,056
Liquors	Packages	15,540
Crockery	„	7,091
Wheat	Bushels	737,970
Flax-seed	„	352,500
Rye	„	56,000
Grass-seeds	Sacks	3,276
Wood pulp	Rolls	23,062
Wool and hair	Sacks	6,886
Ice	Tons	20,100

COASTWISE Receipts at South Chicago during 1899.

Articles.		Quantity.
Unclassified	Packages	12,184
Paper	„	1,500
Lumber	Mille	50,915
Shingles	„	6,020
Lath	„	2,730
Posts	Pieces	38,800
Ties	„	153,750
Poles	„	52,567
Wood	Cords	446
Green fruits	Packages	3,080
Coal	Tons	296,524
Hemp, &c.	Bales	762
Salt	Barrels	848,163
Iron ore	Tons	2,201,847
Pig-iron, &c.	„	1,420
Sugar	Barrels	9,825
Potatoes	Bushels	7,450
Plaster	Barrels	122,650
Stone	Tons	508
Rice	Sacks	6,000
Wheat	Bushels	567 000
Flax-seed	„	93,900

EXPORTS by Lake, 1899.

Articles.		Quantity.	Value.
			Dollars.
Barley	Bushels	284,440	114,686
Corn	,,	9,001,640	3,204,807
Flax seed	,,	171,295	188,936
Oats	,,	711,665	211,296
Rye	,,	25,000	13,750
Wheat	,,	1,299,405	929,388
Flour	Barrels	18,772	62,975
Cornmeal	,,	1,870	3,660
Oatmeal	,,	475	1,261
Mill stuffs	Sacks	22,269	15,917
Grass seeds	,,	728	2,289
Glucose	Barrels	540	5,785
Gluten meal	Sacks	14,742	15,125
Malt	,,	5,925	2,987
Oilcake	,,	13,406	48,300
Starch	Barrels	3,620	14,331
Sugar	,,	2,500	20,768
Beef	,,	611	6,045
Pork	,,	13,734	134,410
Cured meats	Packages	11	249
Lard	Tierces	2,956	56,598
Tallow	Barrels	1,747	27,409
Angle bars	Tons	1,121	22,192
Steel rails	,,	8,468	132,628
Wire rods	,,	2,497	43,588
Bolts	Kegs	62	226
Spikes	,,	303	951
Manufactured iron	Tons	266	19,310
Hardware	Packages	1,305	9,885
Lumber	Mille	6	137
Oils	Barrels	544	7,745
Soap	Boxes	12	94
Liquors	Packages	1	6
Groceries	,,	3	11
Unclassified	,,	175	1,502
Total value			5,319,197

NOTE.—Average value of exports in 10 years preceding 1899, 3,468,000 dollars.

SHIPMENTS of Grain, 1899.

	United States Ports.	Collingwood.	Depot Harbour.	Goderich.	Kingston.	Midland.	Owen Sound.	Prescott.	Sarnia.	Sault-Sainte-Marie.	Total.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Barley	2,516,552	..	284,440	..	..	..	..	..	..	..	2,800,992
Corn	49,861,942	38,163	6,278,728	732,532	1,919,312	2,391,055	333,447	973,306	39,250	895	62,568,630
Flax seed.. ..	1,779,043	..	171,295	..	..	..	..	..	..	..	1,950,338
Oats	12,090,066	..	1,057,875	92,600	319,800	105,000	..	..	3,012,415	..	16,677,756
Rye	864,551	..	..	..	25,000	..	..	..	..	..	889,551
Wheat	3,667,021	..	829,955	..	160,450	457,000	150,000	24,000	..	..	5,288,426
Total, 1899..	70,779,175	38,163	8,622,293	825,132	2,424,562	2,953,055	483,447	997,306	3,051,665	895	90,175,693

The Shipbuilding Industry on the Lakes.

The shipbuilding trade on the lakes is now very busy, and, as will be seen from the following list of vessels building, which only includes the large vessels, there are many freighters of 6,000 to 8,000 gross tons capacity nearing completion.

MERCHANT Vessels under Contract in Shipyards of the Great Lakes, February 1, 1900.

	Type.	Dimensions. Over all.	Beam Moulded.	Depth Moulded.	Approximate Value.	Estimated Capacity. Gross Tons. 18 Feet.	Engines and Boilers.	Estimated Horse Power.	Building for—
American Shipbuilding Co.—									
Lorain Works ...	Cargo steamer ...	498	52	30	360,000	7,900	Quad. 16½, 25, 38½, 60 × 40; B. & W. water tube	1,800	American SS. Co. (A. B. Wolvin)
	,, ...	498	52	30	360,000	7,900	Quad. 16½, 25, 38½, 60 × 40; B. & W. water tube	1,800	American SS. Co. (A. B. Wolvin)
	,, ...	474	50	28½	340,000	7,300	Quad. 18, 26½, 41, 63 × 42; B. & W. water tube	1,950	Pittsburg SS. Co. (Carnegie)
	,, ...	474	50	28½	340,000	7,300	Quad. 18, 26½, 41, 63 × 42; B. & W. water tube	1,950	Pittsburg SS. Co. (Carnegie)
Cleveland Works ...	Canal steamer ...	256	42	26½	170,000	3,000	Trip. 20, 33, 54 × 40; 2 Scotch	950	R. B. Rhodes, Cleveland
	Cargo steamer ...	490	50	29	360,000	6,900	Quad. 26½, 37, 54½, 80 × 42; 4 Scotch	2,800	Bessemer SS. Co. (Rockefeller)
	,, ...	436	50	28	320,000	6,100	Trip. 23, 37½, 63 × 42; 3 Scotch	1,600	John Mitchell, Cleveland
	Canal steamer ...	256	42	26½	170,000	3,000	Trip. 18½, 31½, 51 × 36; 2 Scotch	850	American SS. Co. (A. B. Wolvin)
	,, ..	256	42	26½	170,000	3,000	Trip. 18½, 31½, 51 × 36; 2 Scotch	850	American SS. Co. (A. B. Wolvin)
	Cargo steamer ...	461	50	29½	330,000	6,800	Quad. 20½, 30, 43½, 63 × 42; 3 Scotch	2,000	Bessemer SS. Co. (Rockefeller)
Chicago Shipbuilding Co.	,, ...	474	50	28½	340,000	7,300	Quad. 18, 26½, 41, 63 × 42; B. & W. water tube	1,950	Pittsburg SS. Co. (Carnegie)
	,, ..	474	50	28½	340,000	7,300	Quad. 18, 26½, 41, 63 × 42; B. & W. water tube	1,950	Pittsburg SS. Co. (Carnegie)
	Tow barge ...	414	50	27	175,000	5,900	... ...	...	Pittsburg SS. Co. (Carnegie)
	,, ...	450	50	28½	190,000	7,450	... ...	...	Minnesota SS. Co., Cleveland
	,, ...	450	50	28½	190,000	7,450	... ...	...	Minnesota SS. Co. Cleveland
	Passenger steamer	...	...	...	300,000	...	Trip. 33, 51, 82 × 72; 7 Scotch	3,000	B. W. Parker and others, Detroit
Detroit Shipbuilding Co.	Cargo steamer ...	432	50	28	320,000	6,100	Trip. 22, 35, 58 × 42; 2 Scotch	1,400	A. McVittie and others, Detroit
	,, ...	474	50	28½	340,000	7,300	Quad. 18, 26½; 41, 63 × 42; B. & W. water tube	1,950	Pittsburg SS. Co. (Carnegie)
	,, ...	446	50	28	325,000	6,400	Trip. 22, 35, 58 × 42; 2 Scotch	1,400	Eddy Bros., Bay City, Mich.
West Bay City Shipbuilding Co.	,, ...	446	50	28	325,000	6,400	Trip. 22, 35, 58 × 42; 2 Scotch	1,400	Eddy Bros., Bay City, Mich.
	,, ...	498	52	30	360,000	7,900	Quad. 16½, 25, 38½, 60 × 40; B. & W. water tube	1,800	American SS. Co. (A. B. Wolvin)
	,, ...	498	52	30	360,000	7,900	Quad. 16½, 25, 38½, 60 × 40; B. & W. water tube	1,800	American SS. Co. (A. B. Wolvin)
Superior Shipbuilding Co. ...	,, ...	461	50	29½	330,000	6,800	Quad. 20½, 30, 43½, 63 × 42; 3 Scotch	2,000	Bessemer SS. Co. (Rockefeller)
Craig Shipbuilding Co.—									
Toledo, O.	Canal steamer ...	260	42	25	170,000	3,000	Trip. 19, 30, 50 × 40; 2 Scotch	900	Arthur Hawgood, Cleveland
	Passenger steamer	200	32	13½	125,000	1,200	Trip. 20, 32, 54 × 30; 4 water tube	1,000	Geo. T. Arnold, Mackinaw, Mich.
	Canal steamer ...	260	40	18½	170,000	3,000	Trip. 20, 32, 55 × 40; 2 Scotch	950	J. L. Crosthwaite, Buffalo
Union Dry Dock Co., Buffalo	Package freighter	404	50	28	340,000	5,000	Quad. 20½, 29½, 43½, 63 × 42; 3 Scotch	2,100	Lehigh Valley Trans. Co., Buffalo
Jenks Shipbuilding Co.—	Canal steamer ...	258	40	18½	170,000	3,000	Trip. 20, 33, 54 × 40; 2 Scotch	950	J. L. Crosthwaite, Buffalo
Port Huron, Mich. ...	Cargo steamer ...	440	50	28	320,000	6,100	Trip. 23, 38, 63 × 40; 3 Scotch	1,600	Capt. Thos. Wilson, Cleveland
	Canal steamer ...	257	42	26½	170,000	3,000	Trip. 17½, 28, 47 × 40; 2 Scotch	800	Capt. Thos. Wilson, Cleveland
Jas. Davidson, West Bay City, Mich.	Tow barge	...	...	...	90,000	4,500	... ...	...	Builder's account
Alex. Anderson—									
Marine City, Mich. ...	Sand steamer ...	150	38	9	22,000	...	Not determined as yet...	200	John Corrigan, Cleveland
	Tow barge	290	41	...	40,000	3,000	... ...	...	Edward Carter, Erie, Pa.
S. Langell, St. Clair, Mich. ...	Cargo steamer ...	265	40	22	100,000	2,700	Comp. 23, 48 × 40; 1 Scotch	750	Builder's account

Besides those given in this list, many small vessels are building, and the yards are very busy repairing and refitting steamers and sailing vessels for the coming season. Many tugs and launches are also being completed, one yard alone having 100 small boats on hand.

Some of the vessels mentioned above and called canal steamers are being built for the river traffic in the ore carrying trade, and will not be used for the canal trade in carrying grain.

These vessels are all designed with a great idea of economy, and are supplied with every labour-saving device that has been found useful, and American shipowners are always ready to take up any practical invention which tends to reduce manual labour.

The steamers are fitted with quadruple expansion engines of high power, and nine of them are to have Babcock and Wilcox tube boilers.

The vessels building and built of the canal size are designed for the traffic to Montreal, with a possible transference to the coast if a better chance of profit should seem possible there.

It seems probable that the enlargement of the St. Lawrence Canals will prove a great source of profit to the lake shipbuilders, both in the United States and Canada, as not only should it increase the local demand for vessels, but also will enable them to compete with Atlantic Coast shipbuilders for coast vessels.

The lake works are admirably equipped and economically administered, and being situated so close to the sources of supply of iron, steel, and timber should be able to compete with the yards of any part of America; these yards should also be able to bid for the revenue cutters, light-ships, and other similar craft for the ocean trade with a great chance of success.

The Babcock and Wilcox water tube boilers which are to be used in the new steamers will contain a new style of baffling, whereby the gases will be forced over the tubes three times before allowing them to enter the up-takes.

All the freighters, whether steam or sail, are being built with hatches 24 feet from centre to centre, and by this arrangement are loaded and unloaded with great rapidity; the docks are all arranged to suit these vessels, and a vessel carrying 7,000 tons of ore can be unloaded in two days and loaded in one-half day.

The lake vessels carry also very small crews when compared with ocean vessels, and every arrangement is made to do the work by machinery when possible; the schooners and towing-barges have crews of from six to eight all told, while a steamer of 2,006 tons gross carries the following crew:—Captain, two mates, two engineers, two firemen, one greaser, two cooks, two wheelmen, two watchmen, and three deck hands, and other vessels in proportion. This, of course, can only be done by having all the mechanical assistance possible, and enables the vessel to make good profits and yet pay the crew good wages.

In considering the shipbuilding interests on the lakes it must be remembered that Canada is also building ships of which no account is made in this report.

At the yard of the Chicago Shipbuilding Company there are, among other vessels building, four large tow-barges or schooners, one of which, the "Marsala," has just been launched, and is a good sample of the class of vessel which has been regularly turned out of the yards in South Chicago for the last few years. The "Marsala" is 436 feet in length on keel, 50 feet beam, and 28½ feet deep, with a registered tonnage of 5,039 tons. Drawing 18 feet of water, the "Marsala" will carry 7,500 tons of iron ore, which will give an idea of the immense size of the ships now being built and of the traffic for which they are being used. The other three vessels nearing completion at the same yard are all about the same size, towing-barges or schooners, and will be fitted with three steel masts which will be used in towing, and are also supplied with numbers of hatches for loading and unloading.

In this yard there are now 1,400 men employed, being an increase of 500 during the past year.

The Chicago Shipbuilding Company own dry docks at six ports and five shipbuilding yards at different points, and are now considering the advisability of building another dry dock at Buffalo.

At their shipbuilding yard in South Chicago they now find that launching the vessels broadside is the most satisfactory way.

In July, 1898, in a report on the lake shipping by the French Consul at Chicago, he called attention to the fact that there was at that time a marked tendency to build large ships up to 3,000 tons net, but in 1899 the tonnage had increased to over 4,000 tons.

In the first week of April a contract was let to the American Shipbuilding Company for four steel steamers. These vessels are to be of a size to pass through the Welland Canal to the ocean, and there are said to be 18 vessels of a similar size now under contract in the different American shipbuilding yards. These new boats are to be built like ocean boats with the engines amidships, instead of aft, according to the usual lake custom. The placing of the engines aft gives a large unobstructed hold for quick loading and unloading, because profitable running depends on the largest possible number of trips being made in the short season. Boats with the engines placed amidships to give them more steadiness on the ocean, and drawing 18 feet when fully loaded, plying all summer in the profitable lake trade on this 18 feet draught, will be able to take on a load of 90,000 bushels of grain, giving a draught of 14 feet, pass through the canals, and enter the salt water trade for the winter.

The Cramps of Philadelphia, the largest of the coast shipbuilders, are building a yard at Collingwood, Ontario, to enter the lake business. Collingwood is a town with a promise of a bright future and will soon be a great ore shipping port as the Laurentian Mountains, close to Georgian Bay, contain great deposits of iron which will probably soon be opened up and will give the Canadian builder as cheap material for building as the American now has.

Of course any lake boat which is intended for salt-water trade will have to be equipped with condensers, and ocean boats which run through the lakes will save some expense in cleaning.

In every device for lessening the cost of labour the United States are far in advance of any other nation; in every step of the process from the time ore is taken from the ground until it is placed in the furnaces from which it emerges as pig-iron, improvements have been made and the only saving of time or expense which can still be made is in the transference of the ore from the ships to the cars.

The manner in which cargoes are transferred to and from ships at ports on the great lakes is astonishing, even when it is taken into consideration that both vessel and dock are built to suit each other exactly, and the unloading of iron ore by means of huge buckets, travelling at a high rate of speed on bridge tramways extending from the ships to the cars has always been considered marvellous, but it did not satisfy the iron ore men who saw coal shippers in possession of a device which picks up a loaded car, empties its contents into the hold of a vessel and returns the car to the track within one minute, and they have, therefore, invented a new machine for unloading. The new machines will take the place of large bodies of men who have been employed to load the ore into the buckets which are now used for unloading. This labour is very arduous, and only the hardiest men can stand the excessive heat. The hours are often 11 and 12 and the wages earned about 1*l.* per day. The shovel of the machine which is to take the place of these men is of the clamshell type and has a capacity of fully 10 tons of ore. The shovel, which is worked by a hydraulic cylinder, is attached to a mast, which revolves in a complete circle and in which an operator is stationed. By means of the walking-beam to which it is attached the mast is run out over a vessel, lowered through the hatch and turned in any direction, its radius being about 9 feet enabling the scoop to reach the bilge of any vessel on the lakes. When the shovel is closed it is lifted and runs back over the cars or hoppers as is required. The whole machine is of heavy steel and runs lengthwise on the dock while the heavy walking beam at right angles to the dock crosses the top of the main structure. The depending leg is kept in a vertical position by means of a parallel motion. The bucket end of the walking-beam is counterbalanced by an hydraulic accumulator. The movement of the whole ponderous machine along the dock is accomplished by means of a pair of engines geared to the wheel on each main leg of the structure and this facilitates to a considerable extent the unloading of the lake steamers, which have from 10 to 12 hatches. Several of these machines can, therefore. be put to work on one boat or one machine be moved from hatch to hatch. It is said that the machine will handle about 300 tons of ore per hour from boats to cars and that it will take out from 90 to 95 per cent. of all the ore in the hold of a vessel, requiring only two men to work the machine while three men can clean up what ore is not caught by

the shovel. With three or four of these machines unloading a vessel the ore would be removed as expeditiously as it is loaded at the ports on Lake Superior, *i.e.*, three hours.

This new device is only suited to lake ships, which are all built with the one object of saving labour, but it shows what the British shipbuilder must look forward to and prepare to compete with.

That the shipbuilding in the lakes is at present only beginning is apparent, and, with means of getting to the seaboard, it should advance rapidly, but, at the same time, the lake trade is also increasing, and there should certainly be an opening for British capital both in building and owning lake vessels.

With the exception of Milwaukee the following is a list of the customs districts on the lakes with the number of shipbuilding yards and vessels, and has been supplied by the courtesy of the Collectors of the districts. The shipbuilding in Milwaukee must be large, and it may be taken for granted that there is every facility for repairing obtainable.

VESSELS Built in 1899.

	Class.	Name.	Material.	Tons.
Chicago (2 yards)	Yacht	"Argo"	Wood	9
	"	"Gloria"	"	6
	Propeller	"Illinois"	Steel	1,469
	Yacht	"Josephine"	Wood	8
	Lighter	"McCormick Co."	"	39
	Barge	"Manila"	Steel	4,667
	Propeller	"Maunaloa"	"	4,004
	"	"Nellie B."	Wood	11
	Yacht	"Nymph"	"	16
	"	"Tartar"	"	12
	"	"Vera"	"	8
	"	"Widsith"	"	6
Cuyahoga District (3 yards in Cleveland, 2 in Ashtabula, and 1 in Lorain)	Steamer	"M. A. Hanna"	Steel	3,116
	"	"Pennsylvania"	"	3,604
	"	"Henry W. Oliver"	"	3,617
	"	"Eureka"	"	1,399
	"	"H. C. Frick"	"	3,159
	"	"Malietoa"	"	3,921
	"	"Sea Wing"	Wood	27
	Yacht	"Ada W."	"	5
	Steamer	"Douglas Houghton"	Steel	4,034
Marquette (3 yards)	Propeller	"Arthur Orr"		2,745
	Schooner	"John Smeaton"		4,725
	Propeller	"Stella B."		6
Duluth (1 small yard)	Scow	"Olson"		115
	"	"B. 19"		169
	"	"B. 20"		167
	"	"No. 2"		227
Detroit (4 yards)	Steamer	"Transfer"		19
	Scow schooner	"Lakeside"		32
	Steamer	"Pennsylvania"		420
	" gas	"Algonquin"		15
	" gas	"Firefly"		15
	"	"Angeline"		3,538
	"	"Admiral"		3,547

VESSELS Built in 1899—continued.

	Class.	Name.	Material.	Tons.
Toledo (2 yards)	Steam scow	"Mae"		1,497
	"	"Porto Rico"		854
	"	"Dan W. Miller"		17
	"	"City of Rossford"		288
Port Huron (11 yards)	Schooner	"Chicamauga"		2,472
	"	"John Fritz"		4,693
	"	"Santiago"		2,600
	"	"Viola"		12
	Steamer	"W. G. Mason"		99
	"	"Maud"		98
Buffalo (5 yards)	Propeller	"Eliza H. Strong"		614
	Barge	"H. B. & B. M., No. 13"		354
	Scow	"George H. Striker"		31
	Barge	"H. B. & B., No. 18"		38
	"	"H. B. & B., No. 19"		32
	"	"H. B. & B., No. 14"		354
	Screw steamer	"Triton"		24
	"	"H. A. Meldum"		47
	"	"Comet"		13
	"	"Cornelius M. Desmond"		22
	"	"Buffalo"		3,272
	"	"George E. Latimer"		19
	"	"C. Person's Sons"		34
	Scow	"Calcium"		345
Sandusky (3 yards)	Steamer	"A. Foster"		93
	"	"Grace M."		12
	"	"Alexa L."		11
Grandhaven has built	"	"Carrie J."		30
	"	"Topinabee"		16
	"	"York State"		89
	Schooner	"Bonnie Boy"		21

Buffalo has 5 yards and turned out 14 vessels; Ogdensburg has 1 yard and has launched no vessels.

VESSELS Lost.

Class.	Name.	Fate.	Tons.
Schooner ..	"America"	Foundered ..	257
Tug	"G. J. Porr"	„ ..	13
Side wheel ..	"Ivanhoe"	Burned	200
Propeller ..	"R. J. Gordon"	„	143
Tug	"Satisfaction"	„	18
Schooner ..	"H. D. Root"	.. ..	116
„ ..	"South-West"	.. ..	292
Steamer	"Superior"	.. ..	964
„	"Chisholm"	.. ..	1,775
„	"L. R. Doty"	.. ..	2,056
„	"Constitution"	.. ..	96
„	"S. Neff"	.. ..	129
Schooner ..	"Lena M. Nelson"	Lost	85
„	"Amelia Hanson"	„	5
„	"Legal"	Abandoned ..	14
„	"Archie B. McDougall" ..	„ ..	25
„	"T. Y. Avery"	„ ..	256
Steamer	"Shriver Bros."	„ ..	17
„	"Wm. Parks"	„ ..	41
„	"Andrew F. Gale"	„ ..	13
„	"John V. Moran"	Lost	1,350
„	"Douglass Cornell" ..	„	10
Schooner ..	"Nelson"	Stranded ..	729
„	"Mary Dunn"	„ ..	31
Propeller ..	"Pilot"	Burned	15
Tug	"Erie"	„	37
Schooner ..	"Monitor"	Foundered ..	2,391
Steamer	"R. G. Stewart"	Burned	169
„	"B. Anderson"	„	117
„	"E. P. Ferry"	„	36
Schooner ..	"Ganges"	Lost	333
Steamer	"Grace A. Ruelle"	„	13
Schooner ..	"Keepsake"	„	286
„ ..	"S. A. Irish"	Abandoned ..	234
„ ..	"Nelson"	Lost	766
„ ..	"Mary Miller"	Abandoned ..	10
„ ..	"Democrat"	„ ..	7
„ ..	"Seminole"	„ ..	188
„ ..	"Dreadnought"	„ ..	10
„ ..	"John Rice"	„ ..	153
Steamer	"Sea Gull"	„ ..	74
„	"John M. Edson	„ ..	20
„	"Colorado"	Lost	1,470
„ ..	"Martin Swain"	„	285
„	"Hiram W. Sibley" ..	„	1,418
„	"Lloyd S. Porter"	„	536
„	"St. Lawrence"	„	1,437
„	"Sprite"	Abandoned ..	23
„	"Luther Westover" ..	„ ..	123
„	"Alanson Sumner" ..	Lost	256
„	"Edgar Haight"	Abandoned ..	13
„	"Nellie Torrent"	Lost	302

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DIPLOMATIC AND CONSULAR REPORTS.

UNITED STATES.

REPORT ON THE

MINING INDUSTRY OF COLORADO.

Presented to both Houses of Parliament by Command of Her Majesty,
JULY, 1900.

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Report on the Mining Industry of Colorado by Mr. Pearce, British Vice-Consul at Denver.

(Received at Foreign Office, June 19, 1900.)

Out of the 56 counties which comprise the State of Colorado, 38 may be said to produce the precious metals, together with lead and copper. The most important of these counties, however, as shown in the statement by the State Bureau of Mines for the year ending December 31, 1899, are thirteen in number as follows: Boulder, Chaffee, Clear Creek, Gilpin, Lake, Ouray, Park, Pitkin, San Juan, San Miguel, Summit, Teller (Cripple Creek district), and Mineral.

I have deemed it sufficient to refer to these counties in the order named, showing the output of the precious metals, lead and copper, and any other facts which may be of interest.

Boulder County.

It will be seen from the statement at the end of this report, that Boulder County is credited with having produced a total of 608,493 dol. 21 c. for the year 1899, as follows:—

	Value.	
	Dollars	c.
Gold	547,858	35
Silver	45,501	84
Copper..	13,879	50
Lead	1,253	52

The mines are principally gold bearing, the character of the ore being mostly a combination of gold and silver, with tellurium. Certain mines from portions of the county produce ores which contain gold associated with copper, and some silver. These ores are outside of what is known as the Telluride Belt.

The ores are principally sent by rail to the smelting works in Denver, distant about 25 miles. The veins are generally small, and occasionally the ore is of a very high grade. The low grade ore is treated on the spot by milling or concentration and the product sent to the smelters.

The following is a list of the principal mines of the county:— B. and M. Group: Emancipation, Ingram, Golden Age, Village

Belle, Caribou, Dew Drop; Pennsylvania group: Belcher, Logan, Gold Hill, Red Cloud, Anchor.

Chaffee County.

The following list represents the principal mines of Chaffee County:—Sedalia, Copper Star Group, Anna G., Cora Belle, Mary Murphy, Barrick.

The product from these mines consists mainly of ores containing gold, silver, lead, and copper. The precious metals are generally associated with lead, the copper ores containing only a very small quantity of gold and silver.

The ores are principally smelting ores, and are marketed at Pueblo and Denver, the gross output for 1899 being as follows:—

	Value.	
	Dollars	c.
Gold	216,662	94
Silver	87,784	58
Copper..	122,695	21
Lead	53,330	41
Total	480,473	14

Clear Creek County.

Clear Creek County is one of the oldest mining districts in the State, and several of the mines shown in the list date back some 30 years or more, when mining in Colorado may be said to have been in its infancy.

The ores produced consist mainly of gold and silver, these metals being more or less associated with lead and copper. The richest silver ores are almost invariably associated with lead, whilst the gold ores appear to have a more intimate association with copper.

The richest grades of ore are sent to the smelters, and the poorer quality is treated by stamp mills and concentrating works. The product from these mills is sent to the United States Mint in the form of crude gold, and the concentrated metal to the smelters.

The mines are at an altitude of between 7,000 and 8,000 feet above sea-level, and they are connected by railroad with the smelting works, which are located in the plains below.

The leading producing mines of Clear Creek County are as follows:—Stanley Mines, Lamartine Group, Freeland, Toledo, Crown Point and Virginia, Centennial, Doric, Paymaster, Mendon, Independence, Conqueror, Gold Dirt, Tenth Legion, Griffith, Dives, Pelican, Bismarck, Mendota, Frostburg, Pay Rock, Smuggler, Muscovite, Polar Star Extension, and Comet.

The following figures represent the value of the product from this county for 1899:—

	Value.	
	Dollars	c.
Gold	546,824	85
Silver	895,427	82
Lead	322,566	82
Copper..	51,591	31
Total	1,816,410	80

Gilpin county is the oldest mining district in the State of Colorado. It was in this county that gold was first discovered in 1859, and since that time mining has been carried on extensively. It may be said to be essentially a gold-bearing district, the gold being associated with a very small amount of silver and variable quantities of copper, and (in some few cases) lead. Gilpin County.

The higher grade ores are sent to the smelters by rail, and the lower grades, which will not stand the expense of transportation and the charges for smelting, are treated on the spot by the stamp-milling process and by concentration. The crude gold is sent to the United States Mint for refining, and the concentrated metal is sent to the smelters.

The concentrated metals, like those from Clear Creek County, have an increased value to the smelters on account of the excess of iron they contain, which forms a valuable flux for silicious ores from other sections of the State.

The principal producing mines of this county are:—Topeka, Cook, Gunnell, Hidden Treasure, California, Kansas Burroughs, Ophir Burroughs, Indiana, Alps, Saratoga, Leavenworth, Perigo, Robert Emmet, and Phœnix Burroughs.

The following is the value of the product for 1899:—

	Value.	
	Dollars	c.
Gold	1,996,060	56
Silver	202,960	46
Lead	58,660	35
Copper..	182,689	84
Total	2,440,371	21

The mining industry of Lake County is limited almost entirely to the district known as Leadville, which for the last 24 years has furnished enormous quantities of silver, gold, and lead, with some copper. Lake County.

Prior to the year 1876, and before the discovery of lead and silver in the district, it was known as California Gulch, which was worked by a crude system of placer mining, and some 10,000,000 dol. is said to have been produced in the form of placer gold.

The discovery of lead and silver in this district marked an era

in the mining industry of the State, and may be said to have given more of an impetus to mining generally than any other district in the State, except perhaps the recent valuable discoveries in Cripple Creek.

The mines are situated at an altitude of some 10,000 feet above sea-level. A large town has been built up, the population of which is 10,000. Three smelting works were established, and three distinct lines of railway furnish transportation facilities.

Within the past three years important gold deposits have been found, which have gone very far to neutralise the effect of the continued low price of silver on the value of the output.

The ores are of three classes, viz.: Silver ore containing variable quantities of lead and small values in gold, gold ores containing principally iron and silica as a matrix, and sulphide ores, the latter mainly consisting of a combination of iron and sulphur, with small quantities of silver and gold together with lead and copper. The latter ores command a premium in the smelting market on account of the excess of iron which they contain, which is utilised as a flux.

Mining is conducted on an extensive scale, and modern appliances are being generally introduced to cheapen the cost of production. As an indication of the importance of the district, from a mining point of view, it is stated on good authority that the output for the month of April of this year amounted to 100,000 tons of ore, the value of which was 1,600,000 dol. A large proportion of the ore is treated on the spot by the local smelters, and the remainder is sent to the different smelting works at Pueblo and Denver.

The following is a list of the principal producing mines:— Penrose, Starr, Bonair, Little Jonny, Dolly B, Fanny Rawlings, Resurrection, Big Four, Sedalia, Lillian, Golden Eagle Group, and Home.

The value of the output for 1899 was as follows:—

	Value.	
	Dollars	c.
Gold	2,196,497	55
Silver	4,307,704	80
Lead	2,172,362	78
Copper..	1,137,576	94
Total	9,814,141	57

Ouray County.

The Ouray County is situated in what is known as the San Juan district. The mines are located on the slopes of a very high range of mountains. The ores consist mainly of gold, silver, lead, and copper, in variable quantities. The richer ores are sent to the smelting works at Durango, Pueblo, and Denver. The lower grades are treated locally by concentration, and the rich concentrated metal is sent to the smelting works.

The following are the leading producing mines:—Camp Bird Group, Caroline, American Nettie, Grizzly Bear, Bachelor, Khedive, and Wedge.

The value of the output for 1899 was as follows:

	Value.	
	Dollars	c.
Gold	1,694,940	0
Silver	1,397,862	39
Lead	337,770	45
Copper	53,741	67
Total	3,484,314	51

Park County.

The Park County some 25 years ago was rather an important silver producing district. Some of the mines are at a very high altitude, and since the heavy decline in the price of silver, it has not been found profitable to work them on any extensive scale.

The ores produced at the present time contain principally gold and silver, with small quantities of lead and copper. These ores are sent to the smelters at Pueblo and Denver for treatment.

The following are the principal producing mines:—London, Orphan Boy, and Hock Hocking.

The value of the production for 1899 was as follows:—

	Value.	
	Dollars	c.
Gold	153,040	68
Silver	42,979	22
Lead	24,175	95
Copper	1,391	72
Total	221,587	57

Pitkin County.

The mines of Pitkin County are nearly all situated in the vicinity of the town of Aspen.

Prior to 1893, when silver suffered such a heavy decline in price, this district was second in importance in the State. Some of the Aspen mines, notably the Mollie Gibson, produced large quantities of an exceedingly rich grade of silver ore, and the district became prominent as a large silver producer. These large deposits, however, are said to be exhausted, and at present the mines are producing what might be termed a fair grade of ore, which is sent to the smelters, except a certain percentage of low-grade material, which is concentrated before sending to the smelters.

The ores are principally silver and lead, and contain usually a very large percentage of lime, which is very much prized by the smelting works on account of its fluxing value.

This district is connected with Denver, and other points in the State, by two lines of railway.

The principal producing mines are as follows:—Percy Consolidated Mines, Smuggler, Mollie Gibson, Argentum-Juniata, Aspen, Park Regent, Veteran, Bushwhacker, Della S., and Homestake.

The following is the value of the output for 1899:—

	Value.	
	Dollars	c.
Gold	52,233	09
Silver	2,477,758	23
Lead	1,137,989	59
Copper	3,407	71
Total	3,671,388	62

San Juan County.

The mines of the San Juan County are also situated in the San Juan district.

Within the last few years important discoveries and developments have been made, which have demonstrated the occurrence of extensive ore deposits. The ores may be said to be an intimate association of gold, silver, lead, and copper. The principal operations are carried on in what is known as the Silver Lake Group. The mines are well equipped with machinery, tramways, &c. The ores are concentrated by modern methods, and then sent to the smelters at Durango and Pueblo.

The following is a list of the leading mines:—Silver Lake Group, Sunnyside Group, Gold King, and Pride of the West.

The value of the product for 1899 was as follows:—

	Value.	
	Dollars	c.
Gold	996,273	33
Silver	710,108	40
Lead	715,721	96
Copper	210,908	10
Total	2,633,011	79

San Miguel County.

The mines of the San Miguel County are also situated in the San Juan district, and the occurrence of the ore conditions generally are very similar to those before described in that district.

The Smuggler Union Group of mines, and the Tom Boy, may be said to be the most important.

The ores consist mainly of gold and silver, and in some cases an admixture of lead and copper.

The mines are located very near the summit of the Uncompahgre range of mountains, at an altitude of between 10,000 and 11,000 feet above sea-level. Aërial tramways are used for con-

veying the ore to the concentrating mills in the valley below, where it is concentrated, and then sent to the smelters at Durango and Pueblo.

The following are the leading mines of the district:—Smuggler Union Group, Contention Group, Tom Boy, and Japan Mikado Group.

The value of the output from San Miguel County for the year 1899 was as follows:—

	Value.	
	Dollars	c.
Gold	1,376,704	68
Silver	719,961	74
Lead	175,174	07
Copper	28,218	09
Total	2,300,058	58

Summit County.

The mines of the Summit County have not as yet produced any very large quantities of ore. Placer mining has been carried on for a great many years during the summer months, but no very extensive developments have been made in what might be termed lode mining.

The ores are gold, silver, and lead, with some little copper.

The bulk of the ore is concentrated and sent to the smelters.

The following is a list of the principal mines:—Mountain Pride, Excelsior, Cashier, Hamilton, Helena, Minnie Group, Oro, Lucky, Victoria, Wellington, Washington, and Minnie-Ella.

The value of the product for 1899 was as follows:—

	Value.	
	Dollars	c.
Gold	260,566	02
Silver	157,810	74
Lead	180,249	67
Copper	11,540	01
Total	610,166	44

Teller County.

More than ordinary importance is attached at this time to what is known as the Cripple Creek district, which is situated in Teller County.

The district is located west of Pikes Peak, at an altitude of from 9,000 to 10,000 feet above sea-level. Its discovery as a gold producer only dates back to 1891, and since that time statistics show a large increase every year in the output of its mines.

For many years, since the early settlement of Colorado, the district was known only as a range for cattle, and no suspicion existed in the mind of the prospector that gold in such large quantities would be found in that locality.

The mines cover a very large area, and a number of little towns have sprung up known as Cripple Creek, Victor, Goldfield, Altman, Anaconda, Elkton, Gillette, Independence and Lawrence, all of which are connected at this time by a very complete railroad system.

The first mine discovered in the district, and perhaps the richest, was Stratton's Independence, which has been recently purchased by an English company.

The geological conditions are somewhat peculiar: the ore is found in connection with outflows of andesite and phonolite, the latter rock being exceedingly rare in this country. The gold is found associated with tellurium, and is known as telluride of gold, with some little silver. The zones of gold bearing rock are in many cases remarkable for their size and richness; it is not uncommon to see large masses of rock which have become charged with gold in sufficient quantity as frequently to make it a rich ore. Stratton's Independence, Portland, Gold Coin and others are examples of such deposits. In some cases the deposits have been explored to a depth of 600 or 800 feet without any apparent indication of a marked decrease in values.

The higher grade ores are selected and sent to the different smelters at Pueblo and Denver. The lower grades are generally treated by chlorination in very extensive mills situated at Florence, a small town on the Denver and Rio Grande Railroad, and Colorado City near Colorado Springs, at the eastern base of Pikes Peak. The cyanide method is also worked successfully on these ores in certain sections of the district.

The following are the principal producing mines in the district:—Portland, Stratton's Independence, Gold Coin, Isabella, Strong, Jack Pot, Vindicator, Elkton, Golden Cycle, Lillie, Mary McKinney, Gold King, Ophir, Consolidated Mines, Independence T. and M., Last Dollar, Pinnacle, Granite, Raven, Doctor, Union, Grafton, Garfield Consolidated, Matoa, Anaconda, El Paso Gold, Modoc, Deadwood, Anchora Leland, Wilson Creek Consolidated, Victor, Gold Sovereign, Damon, Jerry Johnson, Free Coinage and Coriolanus.

The following is the value of the output from this county for the year 1899:—

	Value.	
	Dollars	c.
Gold	16,058,564	34
Silver	49,033	74
Copper	48	43
Total	16,107,646	51

It will be seen from the above statement that the mines of Cripple Creek have very materially added to the State's production of gold, and at this time it may be said to be the most important of the mining districts in the West.

Mineral County.

The mining section of Mineral County is situated in what is known as the Creede district, and it has been a large silver producer since 1890, the year it was discovered. The mines are very extensive, and before the heavy decline in the price of silver they were extremely profitable. The ore is almost essentially silver bearing, with a small quantity of lead and some little gold. The ore is sent by rail direct to Pueblo, the nearest smelting point.

The following are the leading producing mines:—Commodore, Bachelor, Last Chance, Amethyst, Corsair, United Mines, Ridge, and Solomon.

The value of the output for 1899 was as follows:—

	Value.	
	Dollars	c.
Gold	91,671	45
Silver	2,262,192	42
Lead	253,769	14
Copper	3,561	27
Total	2,611,194	28

Labour.

There are between 31,000 and 32,000 men employed in the metalliferous mines in the State. Out of this number the Cripple Creek district gives employment to 5,500, and the Leadville district 3,000.

About 9,000 miners in the State belong to a labour union known as the Western Federation of Miners; this organisation is very strong in the Cripple Creek district. In the Leadville district only about half the miners are members of the union. In Gilpin and Clear Creek Counties there are no union miners.

At the present time the miners of the State are fully employed, and there is an absence of any bad feeling between the mine owners and their workmen.

The scale of wages paid generally throughout the State is as follows:—

	Per Day.	
	From—	To—
	Dollars.	Dollars.
Ganger	3·50	5
Miners	2·50	3
Trammers	2·50	3
Cagers	2·50	3·50
Nippers	1	3
Timbermen	3	4
Topmen	2	3
Labourers	2	3
Engineers	3	5
Pumpmen	3	5
Ore sorters	2	3
Blacksmiths	3	5

In Cripple Creek and a few other districts, eight hours is a day's work. In the majority of districts, 10 hours on day and nine hours on night shift is a day's work. Pumpmen, firemen and engineers are in a number of cases employed on 12 hour shifts.

TABLE showing, by Counties, the Mineral Production of Colorado for the Year ending December 31, 1899.

Name of County.	Gold.		Silver.		Lead.		Copper.		Total Value.
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
	Fine ozs.	Dol. c.	Fine ozs.	Dol. c.	Lbs.	Dol. c.	Lbs.	Dol. c.	Dol. c.
Arapahoe	13	268 71	2	1 19	...	...	...	...	269 90
Archuleta	5	103 35	43	25 62	...	...	...	...	128 97
Boulder	26,505	547,858 35	76,371	45,501 84	28,043	1,253 52	78,816	13,879 50	608,493 21
Chaffee	10,482	216,662 94	147,339	87,784 58	1,193,074	53,330 41	696,736	122,695 21	490,473 14
Clear Creek	26,455	546,824 85	1,502,900	895,427 82	7,216,260	322,566 82	292,966	51,591 31	1,816,410 80
Conejos	303	6,263 01	22,907	13,695 65	...	...	...	...	19,958 66
Costilla	39	806 13	126	75 07	...	...	...	...	881 20
Custer	51	1,054 17	6,004	3,577 18	836,894	37,409 16	923	162 54	42,203 05
Delta	10	206 70	10	5 96	...	...	...	...	212 66
Dolores	3,234	66,846 78	257,052	153,151 59	2,046,232	91,466 57	44,509	7,838 03	319,302 97
Douglas	4	82 68	24	14 30	...	...	..	...	96 98
Eagle	2,230	46,094 10	44,393	26,449 35	1,187,930	53,100 47	5,876	1,034 76	126,678 68
Huerfano	6	124 02	5	2 98	...	...	...	...	127 00
Fremont...	455	9,404 85	3,974	2,367 70	11,443	511 50	6,698	1,179 52	13,463 57
Gilpin	96,568	1,996,060 56	340,652	202,960 46	1,312,312	58,660 35	1,037,421	182,689 84	2,440,371 21
Grand	6	124 02	13	7 75	...	...	...	...	131 77
Garfield	35	723 45	17	10 13	...	...	...	...	733 58
Gunnison	3,392	70,112 64	132,983	79,231 27	1,399,336	62,556 32	46,186	8,133 35	220,027 58
Hinsdale	1,855	38,342 85	155,902	92,886 41	10,572,353	472,584 18	49,676	8,747 94	612,561 38
Jefferson	66	1,364 22	351	209 13	770	34 42	254	44 73	1,652 50
Lake	106,265	2,196,497 55	7,230,198	4,307,704 30	48,598,720	2,172,362 78	6,459,835	1,137,576 94	9,814,141 57
La Plata...	1,242	25,672 14	3,162	1,883 92	3,176	141 97	211	37 16	27,735 19
Larimer	100	2,067 00	135	80 43	...	...	2,474	435 67	2,583 10
Las Animas	10	206 70	3	1 79	...	...	...	...	208 49
Mineral	4,435	91,671 45	3,796,899	2,262,192 42	5,677,162	253,769 14	20,223	3,561 27	2,611,194 28
Montrose	35	723 45	46,119	27,477 70	...	...	75,006	13,208 56	41,409 71
Mesa	6	124 02	4,120	2,454 70	...	...	4,650	818 87	3,397 59
Montezuma	746	15,419 82	227	135 25	...	...	...	...	15,555 07
Ouray	82,000	1,694,940 00	2,346,194	1,397,862 39	7,556,386	337,770 45	305,177	53,741 67	3,484,314 51
Park	7,404	153,040 68	72,137	42,979 22	540,849	24,175 95	7,903	1,391 72	221,587 57
Pitkin	2,527	52,233 09	4,158,708	2,477,758 23	25,458,380	1,137,989 59	19,351	3,407 71	3,671,388 62
Rio Grande	929	19,202 43	2,718	1,619 38	1,635	73 08	336	59 17	20,954 06
Routt	559	11,554 53	1,271	757 26	3,405	152 20	...	...	12,463 99
Saguache	188	3,885 96	14,306	8,523 51	441,095	19,716 95	35,319	6,219 68	38,346 10
San Juan	48,199	996,273 33	1,191,857	710,108 40	16,011,677	715,721 96	1,197,661	210,908 10	2,633,011 79
San Miguel	66,604	1,376,704 68	1,208,395	719,961 74	3,918,883	175,174 07	160,239	28,218 09	2,300,058 58
Summit	12,606	260,566 02	264,872	157,810 74	4,032,431	180,249 67	65,531	11,540 01	610,166 44
Teller, Cripple Creek	776,902	16,058,564 34	84,299	49,033 74	...	...	275	48 43	16,107,646 51
Total	1,282,471	26,508,675 57	23,114,688	13,771,731 10	138,048,446	6,170,765 53	10,614,252	1,869,169 78	48,320,341 98

NOTE.—Gold figured at 20·67 dol. per oz.; silver figured at 0·5958 dol. per oz.; lead figured at 0·0447 dol. per lb.; copper figured at 0·1761 dol. per lb.

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UNITED STATES.

REPORT ON THE

CATTLE TRADE IN KANSAS.

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Report on the Cattle Trade of Kansas

By MR. VICE-CONSUL YOUNG.

(Received at Foreign Office, August 13, 1900.)

In considering the cattle industry of the great Western States it is necessary to understand the physical conditions which exist in different parts, and the State of Kansas may be taken as a type of the West in this respect. It would be misleading to treat of the cattle industry in the State of Kansas as totally distinct from that of the surrounding country, as the Kansas cattle business is essentially bound up with that in Oklahoma, the Panhandle of Texas and other parts, cattle being moved from one district to another to suit conditions and requirements. The same cattle are at one time running upon open range in New Mexico, and at another time fed in the fields of maize or Indian corn in Eastern Kansas.

The western country may be loosely divided, from a cattleman's point of view, into three sections, the first of which—the eastern part of the State of Kansas may be taken as typical—is a rich well watered country with ample rainfall. Abundant crops are raised throughout all this district, the largest product being that of Indian corn, and the chief use to which this crop is put being the feeding of cattle. In this agricultural district the blue grass of Kentucky, corresponding to the fresh sweet grass of England, has been introduced and forms admirable pasture. The second district is that of which the central counties in the State of Kansas are typical. In this region the rainfall is somewhat uncertain, Indian corn and other valuable feeding crops are raised on the lands along the streams, but on the uplands practically no crops can be successfully raised, or at all events the results cannot be definitely relied upon. These uplands produce a quality of grass known as "blue stem" which gives grazing second to none, and in Kansas the possession of this grass with the hard quality of water arising from the limestone in the district renders the grazing of an excellent quality; the blue stem grass, combined with the hard water, produces a certain hardiness of growth which enlarges and strengthens the frame of the animals and puts the steers thus grazed in excellent condition for taking on flesh when being fed for market.

The third district referred to is that of which Western Kansas may be regarded as typical, and embraces land practically valueless for anything except grazing. Some hay of various qualities can be successfully raised along the low lying lands, but the rainfall is most uncertain and the country is usually a grazing one. The elevation is high and the quality of grasses grown differs from that of the central part of the State, the most usual grass being what is termed buffalo grass, a quality which grows throughout the entire West and down into Texas.

It should be stated that great variations exist in the amount of grazing per acre which can be obtained in different localities. In the arid regions of New Mexico, whilst it is possible that in an exceptionally wet season good grazing can be obtained, it is not safe on account of the frequent droughts, to allow less than 80 acres to each animal grazed. The range is open and the cattle are left to wander, but the rights of those cattlemen who have originally settled in the district are generally recognised or undisputed. The above enormous acreage per head has, however, to be allowed except in places where special water facilities exist.

In the celebrated Panhandle district of Texas, again, the grass forms a much closer sod, and in ordinary circumstances 10 or 15 acres to the animal is sufficient. In Western Kansas even a smaller allowance will suffice, and in the central or "blue stem" country, under ordinary conditions, between 3 and 4 acres per head will suffice for good grazing.

With regard to the numbers of cattle raised or fed in Kansas it is practically impossible to give these with accuracy and all figures would be misleading. For instance, the numbers which could be secured from the returns of the stock yards in Kansas City would falsify all calculations, as the cattle are frequently sent to this market by graziers, are purchased here by feeders who send the cattle out again to their feed lots or Indian cornfields, bringing them back again to this market when ready for killing. These cattle, therefore, would be counted twice in any returns given by the stock yards. Again, the number of cattle brought up from Texas into Kansas for summer pasturage after wintering down in the warmer climate of Texas, is very great, and this constant moving of the cattle and fluctuation of numbers renders figures not only uncertain but misleading. It will be sufficient, however, to state that the cattle industry is very important, and interests nearly all the farming as well as the stock raising community.

A large amount of the produce of Kansas is intended for the consumption of cattle.

Further consideration of the cattle industry may be divided into three divisions according as attention is given to the facts connected with: first, the raising of the cattle; second, the methods of feeding; third, markets, transportation, &c.

A. Cattle Raising.—The tendency throughout the entire West has of late years been to improve the herds to the very highest

pitch. The majority of cattle raisers are inclined to dispose of the tailings of their stock herds at intervals and to introduce the best grade of registered bulls. The increase in the amount of beef which can be yielded by each animal more than compensates for any initial expense in procuring good strains, and the expenditure of a similar amount of grass and feed will produce more beef from a smaller number of animals.

By far the most popular grade of cattle at present is the Hereford. The Shorthorn has many friends, but is not considered so well able to withstand either heat or cold, and is not considered to have the energetic qualities of the Hereford. Polled Angus cattle are also in request and the demand for this grade seems to be on the increase. When brought into feed yards the Angus cattle have an advantage to the feeder in that being polled more cattle are able to be put together to feed without the trouble which arises from the horns of the other grades. Again the absence of horns makes it possible to get more into the stock cars which are used for the conveyance of the animals, and as the railroad rates are charged at so much a car the larger number of animals that can be placed without crowding in each car forms an economy.

In the stock raising districts it has been of late years usual to run the stock cattle in pastures separate from the steers that have been raised, and somewhat different handling is accorded to the two grades. In the Panhandle of Texas it is customary for those handling steer cattle to estimate an annual loss from ordinary causes, and apart from any exceptional circumstances, of about 5 per cent., whilst with stock cattle it is unwise to reckon upon anything less than a 10 per cent. loss. The cattle are now almost entirely run in fenced pastures in the more settled districts in Texas, and no longer permitted to run on the open range. With such cattle in fenced pasture an average calf return of about 60 to 70 per cent. is usually looked for; in some instances it may fall below this, and in other cases where it is possible to handle the cattle in small pastures with every care a much larger return can be at times secured. Careful methods are now followed in the way of branding the calves, and the business is conducted on sounder economical principles than in former years.

Mention should also be made of a further branch of cattle raising to which attention has been given, viz., the raising of registered bulls for use on the stockmen's ranches. These bulls are carefully raised and prices up to 1,000*l.* have been paid for the very best blood, the bull calves obtained being sold for prices running from 20*l.* to 100*l.* It is thought by some cattlemen that the business of raising these bulls is at present rather over-done and that a drop in values may be expected.

As to values generally these have greatly fluctuated in the last few years. Some eight years ago when the cattle trade was in an extremely bad state, a cow and calf could be purchased for some 2*l.*; values are now high, and ordinary stock cattle of fairly good grade sell for about 5*l.* The price of young cattle is

relatively very high, and yearling steers of fairly good quality are now fetching about 4*l*. These figures apply, it will be understood, to stock cattle on grass, and not to cattle fed for market the values of which increase greatly.

B. Cattle Feeding.—This is a most important industry throughout Kansas and other States. Apart from the small grain crops, such as wheat and oats, by far the largest product in Kansas in the agricultural district is Indian corn, and the great majority of farmers prefer to give this corn to cattle rather than sell it. The argument is that by feeding cattle and getting the resulting increase in weight as well as the better price paid for matured beef cattle a larger sum is netted from the corn than by selling it direct. The Kansas farmer, therefore, when his crop is ready, frequently desires to buy steers, usually three year olds, borrowing the money to do so. The corn and other crops are then given to the steers and these animals marketed when ready.

Much more attention is being bestowed on scientific feeding than in past years, but there still remains much to be learned by the average farmer, and a great deal of valuable feeding material is allowed to go to waste through failure to supply the steers with a balanced ration. In too many cases the farmer simply turns the stock loose in his fields of Indian corn, or at all events gives his cattle almost nothing but the corn. Indian corn is a most valuable feed but contains carbo-hydrates in excess relative to the percentage of protein in its constituents. In using corn alone, therefore, the farmer fails to utilise all the carbo-hydrates in his corn from lack of sufficient protein to balance the ration. This mistake, however, is not nearly so widespread as it has been in past years, and the correction is perhaps partly due to the increase in the growth of alfalfa throughout the State. Alfalfa has been of great benefit to the State of Kansas, its long deep roots enable it to reach water and to grow in districts too dry for the raising of other crops, and its large percentage of protein makes it a most valuable hay for cattle, since it is a fact that Kansas raises a much larger percentage of carbo-hydrates in her products than is balanced by the protein contained therein. The crop, therefore, which supplies an excess of protein assists in balancing a ration prepared from the other products of the State.

Apart from the Indian corn and alfalfa the most usual feed-stuffs used are kaffir corn, sorghum, soy beans, stock peas, clover, millet, timothy and other hays. As to the amounts which it has been found desirable to give to the cattle, much would depend upon the combination of feed-stuffs used. The farmer usually reckons that each steer will consume nearly half a bushel of corn per day or its equivalent. If, however, the full value of the feed is to be secured a balanced ration has to be prepared. This can be well effected from corn and alfalfa alone. A ration of say 13 lbs. of shelled corn and 18 lbs. of alfalfa hay per day for the first period for every 1,000 lbs. of live weight would work out to a well balanced proportion. As feeding goes on the steer should receive a little less corn and a little more alfalfa, say 11 lbs. of

corn and 20 lbs. of alfalfa for the second period, whilst for the third period the amount of corn might be increased to 12 lbs. feed with 19 lbs. of alfalfa.

If other feed-stuffs are used the ration can be correspondingly altered. For instance, a daily feed of 12 lbs. of alfalfa, 2 lbs. of prairie hay, 12 lbs. of corn and 2 lbs. of soy bean meal would give good results. Such instances might be multiplied but the point to which attention is rather drawn is the necessity of scientific and well calculated feeding to secure the best results.

As to the increase in weight secured by feeding, it is usual to secure steers weighing about 1,000 lbs. before being fed; a well balanced ration such as described ought to put on, under favourable circumstances, as much as 3 lbs. per day. If, therefore, the cattle are fed for say 100 days an increase of 300 lbs. may be looked for if due care is given, and in place of the immature steer of 1,000 lbs. the farmer has an animal ready for killing, and weighing some 1,300 lbs. It will, of course, be understood that these weights are taken only as typical, and that great variations occur according to the quality of the animal and the character and correctness of feeding him.

Viewing this feeding from a financial standpoint it may be stated that the farmer on to-day's market price may probably pay 35 dol. or 7*l.* for a steer weighing 1,000 lbs. Assuming that he gives the equivalent of 50 bushels of corn to each steer, and estimates the market value of that corn at 30 c. per bushel, the cost of the steer and feed together would be some 50 dol. or 10*l.* A steer weighing 1,300 lbs. and ready for killing would probably fetch on to-day's market nearly 5 dol. per 100 lbs. This might bring the value of the steer to about 13*l.*, or an apparent profit of 3*l.* per head, from which would have to be deducted all costs of handling, risk of loss, transportation charges, and other incidental items.

C. Markets.—The principal market for the South-Western States and territories is Kansas city; cattle are sent to this market from grass and also in full fed condition for beef. The purchasers of these grass fed cattle are generally farmers or feeders who send out the cattle, feed them and bring them again to market at a later date in condition for purchase for dressed beef. The packing houses form one of Kansas city's largest industries and receipts at the stock yards have at times run up as high as 19,000 head in one day. The cattle are carried in large cars especially built for the trade; the number of cattle that can be accommodated in each car varies with the size and condition of the cattle, whether full fed or lean. As the railroad rates are based upon car lots it is an economy to load as many as possible in one car without undue crowding. A car lot may be roughly estimated as containing about 24 head of steers weighing 1,000 lbs. each.

On arrival at Kansas city or other principal market the cattle are unloaded and held in open pens at the stock yards until sold, all facilities being given for watering and feeding the stock, feed of all kinds being obtainable from the Stock Yards Company

to whom the usual yard charges are paid. The Live-Stock Exchange is built in the centre of the pens of the stock yards and platforms enable sellers and purchasers to examine with great ease all cattle in the yards. The arrangements for handling the cattle in this manner are good, and arrangements can be speedily made for the removal and despatch of cattle. In the case of cattle being sold for beef the large packing houses (all of which are in the neighbourhood of the stock yards) have special arrangements for running the cattle direct to the slaughter-houses.

In conclusion it may be pointed out that the central-western and south-western parts of the United States seem to afford the very greatest facilities for the cattle trade. In the western portions excellent grazing is afforded in a country of little value for agriculture, whilst in the country tributary to Kansas City there is also abundant agricultural land largely used for the growth of crops consumed in cattle feeding, whilst the facilities afforded by Kansas City as a market for mature cattle for beef are unexcelled and everything is arranged to accommodate the cattlemen who operate an industry of so vast an importance to the whole district.

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UNITED STATES.

REPORT ON THE

MINING AND METALLURGICAL INDUSTRY OF THE BUTTE DISTRICT, IN THE STATE OF MONTANA.

Presented to both Houses of Parliament by Command of Her Majesty,
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1900.

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Report on the Mining and Metallurgical Industry of the Butte District, in the State of Montana, by Mr. R. Pearce, British Vice-Consul, Denver.

(Received at Foreign Office, November 9, 1900.)

Through the kindness of Mr. E. A. Braden, the Assayer in charge of the United States Assay Office, Helena, Montana, I am able to present figures which show the actual production of gold, silver, copper and lead for the State of Montana for 1899 :—

		Quantity.	Value.	
			Dol.	c.
Gold	Fine ozs.	233,126·71	4,819,156	95
Silver	„	16,850,754·85	10,043,049	06
Copper	Tons of 2,240 lbs. ..	109,643·88	40,941,905	74
Lead	„ „ ..	9,082·47	909,427	72
Total ..	..	..	56,713,539	47

Mr. Braden reports the total value of metals 68,457,307 dol. 54 c., or a difference of 11,743,768 dol. 6 c., as compared with the above figures. This is accounted for from the fact that he values the silver at 1·2929 dol. per ounce (coinage value) as against an average price of fine silver for the year of 59·6 c. per ounce. The copper is reckoned at 16·67 c. per lb., and the lead at 4·47 c. per lb.

Silver Bow County, in which the Butte district is situated, is credited with the following production :—

		Quantity.	Value.	
			Dol.	c.
Gold	Fine ozs.	62,038·37	1,282,447	08
Silver	„	9,855,831·97	5,869,075	85
Copper	Tons of 2,240 lbs. ..	109,448·78	40,882,492	56
Total ..	..	..	48,034,015	79

It will be seen from the above figures that out of the total value of the product of the State of 56,713,539 dol., 48,034,015 dol. 79 c. belong to Silver Bow County, and may be practically credited to the important district of Butte.

The writer has known Butte for more than 20 years, and from frequent visits extending over that period has had opportunities of watching the marvellous growth of the district.

In 1880 the nearest railway was the terminus of the Utah and Northern, at Beaver Cañon, some 150 miles distant. At the present time it is directly connected with three of the great transcontinental systems: Union Pacific, Northern Pacific, and Great Northern Railways.

The town of Butte covers a perfect network of mineral veins, and the area is limited to only two square miles in extent.

Placer mining for gold was first carried on in 1864, in Missoula Gulch, which is now a part of the town. It was soon discovered by prospectors that silver existed in large quantities, and many mines, which subsequently were found to be very valuable, were located and extensively worked. The Alice Moulton, Lexington, and many others contributed largely every year to the silver output of the State.

Copper was known to exist in the district, but little attention was directed to it, owing mainly to the absence of any local system for the treatment of copper ores, and the heavy cost of transporting it to outside markets.

Large mills were erected and equipped with first class modern machinery and appliances for the treatment of silver ores by amalgamation, but little was done in the way of introducing copper smelting plants until the discovery of the wonderful copper deposits in the now famous Anaconda mine about the year 1882. This mine was purchased as a silver mine, and extensive preparations were made at the time for its operation, and for milling the ore exclusively for silver. It was only on reaching a depth of some 200 feet that copper, in considerable quantity, first made its appearance, and this, we may say, was the beginning of one of the most valuable deposits of copper that have ever been known. Thousands of tons of copper ore containing over 50 per cent. of copper were forwarded to New York to be shipped to the United Kingdom.

As depth increased the rich copper ore changed gradually into an ore much less rich in copper, when it became necessary to adopt some system of concentration and smelting. At first this was limited to the production of matte or regulus, containing from 50 to 60 per cent. of copper, which was sent to the copper smelters and refiners in Baltimore and in the United Kingdom. This led to the establishment of a large plant, and the building up of a large town named Anaconda, which is situated about 16 miles from Butte, the source of the ore supply.

At first wood was used as a fuel for smelting, but as soon as effective railway facilities were complete, coal from Rock Springs, Wyoming, took its place.

The smelter city, Anaconda, is probably the most extensive of its kind in the world.

The old, somewhat crude methods of smelting have gradually given place to a more refined system, and the matte, or regulus, which was formerly shipped to Eastern refineries and to the United Kingdom, is now treated by improved modern methods, it being converted direct to metallic copper in Bessemer converters, and the product treated electrolytically for the separation of the precious metals gold and silver.

Some idea of the importance of the system of refining by electrolysis may be formed from the fact that nearly the whole of the gold and silver credited to Silver Bow County for the year 1899 was obtained from the electrolytic treatment of copper from Butte ores.

The crude ores from the several mines in the Butte district contain on an average from 4 to 6 per cent. of copper, and from 2 to 4 ounces of silver per ton, with traces of gold, which under ordinary conditions would hardly be considered of any practical value, so far at least as the gold contents are concerned. The precious metals, however, accompany the copper through the different stages involved in its concentration to metallic copper, at which point both the gold and silver become an important factor in estimating the value.

In the electrolytic refining of the copper obtained from the smelting of the ore to matte, or regulus, and the Bessemerising of the matte to copper, the precious metals together with any impurities which the copper may contain at that stage are removed, and a refined copper is obtained, which compares favourably in quality with the Lake Superior brand of copper.

The Anaconda has been referred to more particularly, as it stands at the head of copper mining enterprises in Montana. There are, however, other companies of importance, which may be said to be worked generally on the same lines as the Anaconda.

The Boston and Montana Consolidated Copper and Silver Mining Company, which owns an extension of the Anaconda vein (the Mountain View), together with other important mining claims in the same vicinity, is next in importance to the Anaconda. The smelting operations of this company are carried on at Great Falls, Montana, a distance from the mines of 178 miles. Advantage is taken at this point of the extensive water-power of the Missouri River, which is utilised in developing the enormous power required for the various uses of the company.

I find from the "Mining Industry," Vol. VIII, 1900 (an excellent work which treats in detail subjects relating to the mining, metallurgical, and commercial interests of the United States), a statement that the Boston and Montana Consolidated Copper and Silver Mining Company disbursed dividends during the year 1899 amounting to 5,400,000 dol. Its production, with that of the Butte and Boston (a sister company), aggregated 79,000,000 lbs. of refined copper an increase of 17,000,000 lbs. over the production

of the previous year. The sales of copper, silver, gold, and blue stone were 11,257,280 dol. 18 c. The total expenses, including electrolysis, handling and commissions on sale of product, were 5,202,430 dol. 95 c. This is only one example of the importance of the copper industry of Butte.

The following statement, also taken from the "Mining Industry," shows the total output of copper from the different companies operating in Montana for the year 1899:—

	Fine Copper.
	Lbs.
Anaconda	107,914,357
Boston and Montana, Butte and Boston..	79,000,000
Butte Reduction Works	10,049,629
Colorado Smelting and Mining Co. ..	9,572,155
Hecla Consolidated Mining Co.	155,719
Parrot Mining Co.	10,625,696
Montana Ore Purchasing Co.	15,360,679
Others	5,275,716
Total	237,953,951

The most important mines owned and operated by the Anaconda Company are:—The Anaconda, St. Lawrence, Never Sweat, Mountain Consolidated, Green Mountain, Diamond, Wake-up Jim, Bell, High Ore, Modoc, &c.

The principal mines represented by the other companies are:—The Mountain View, Leonard, Parrot, Colusa Parrot, Gagnon, Original, Ground Squirrel, Ramsdell-Parrot, and others.

I learn from good authority that the Anaconda smelter and concentrator are treating daily between 4,000 and 5,000 tons of crude ore, and this company has now in course of construction a complete new plant for the treatment of 5,000 tons daily. The Boston and Montana Consolidated Copper and Silver Mining Company's plant in Great Falls, treats between 2,000 and 3,000 tons daily.

Improvements in concentration for the recovery of small values of copper and silver contained in tailings, which formerly were allowed to escape, are being rapidly introduced with great success.

Mr. Braden in his interesting report, which I have before referred to, states that in 1898 60 per cent. of the world's copper was supplied by the United States, Butte furnishing 41 per cent., Lake Superior 30 per cent., and Arizona 21 per cent. of the domestic production. Thus, Butte furnishes a quarter of the copper product of the world, nearly one-half of which is the output of a single company: the Anaconda.

A table, which I give below, appears also in Mr. Braden's report, showing the production of the Butte Mines from the year 1882, or during a period of 18 years:—

Year.	Quantity.		
	Gold.	Silver.	Copper.
	Fine ozs.	Fine ozs.	Fine lbs.
1882	12,093·75	2,699,296·38	9,058,284
1883	14,560 87	3,480,468·75	24,664,346
1884	21,776·00	4,481,180·36	43,093,054
1885	13,838·29	4,126,677·60	67,797,864
1886	31,223·45	5,924,180·38	57,611,485
1887	48,175·74	6,958,822·92	78,700,000
1888	44,320·06	8,275,768·87	98,504,000
1889	31,652·32	6,560,038·75	104,589,000
1890	25,704·73	7,500,000·00	112,700,000
1891	29,395·35	7,985,089·77	112,383,420
1892	36,222·56	8,311,130·82	158,413,284
1893	33,807·87	6,668,730·16	159,875,499
1894	36,768·01	7,561,124·46	185,194,385
1895	41,473·36	10,051,760·52	197,190,659
1896	59,815·75	11,120,731·78	228,886,962
1897	54,198·03	10,710,815·45	236,826,597
1898	55,343·59	8,996,555·01	216,648,077
1899	62,038·37	9,855,831·97	245,245,908
Total	652,408·10	131,268,203·95	2,337,382,824

Reckoning the gold and silver at their coinage values, and the copper at 12½ c. per lb., which is believed to be a fair average price for copper during the above period, the value of the total output of these three metals in Silver Bow County has been:—

	Value.	
	Dol.	c.
Gold	13,485,644	80
Silver	169,720,506	11
Copper	292,172,853	0
Total	475,379,003	91

The actual value of the silver during that period would be considerably less than that indicated above. 87 c. an ounce would perhaps be a fair average, which would make the commercial value of the entire product 419,861,834 dol. 41 c., or a difference of 55,517,169 dol. 50 c.

The towns of Butte, Anaconda, and Great Falls are said to have a combined population of 85,000 people, whose existence depends almost wholly on the mining and smelting interests connected with the mining of copper ores, which have their origin in the Butte district.

Miners are paid high wages, 3 dol. 50 c. per day, and at present are entirely governed by the rules and regulations of a society known as the Miner's Union, which is supported by funds regularly contributed by its members.

There does not appear to be any serious clashing of interests as between the owners of the mines and the workpeople. Miners are not allowed by the union to work for less than 3 dol. 50 c. per day, but on the other hand a higher standard of labour is probably obtained, owing to the weeding out in a measure of an inferior class of labour which does not reach a fair standard.

So long as conditions are favourable, and the price of copper keeps near its present high rate, the capital invested in the district can perhaps well afford to deal liberally with the miners rather than run the risk of strikes, with all the attendant difficulties and evils.

It is fortunate that the companies who are interested in the mines and smelting works of the district have been able to command almost unlimited capital for the development of their several interests.

The mines in their early history were equipped with machinery and appliances which were then considered sufficient for almost any ordinary requirements, but as soon as the magnitude of the ore deposited began to be apparent, a large outlay of fresh capital was necessary for the erection of larger and improved appliances to cope with the increased output of ore.

The smelting establishments that at first were arranged on the lines of old-fashioned methods imported from European experience and practice had to give way to modern methods, and these had their birth in this district mainly as a result of necessity.

Automatic furnaces replaced old-fashioned hand furnaces, and proved to be not only more effective in their work, but of great advantage in economising labour and fuel. The small reverberatory matting furnace of the Swansea type, with a capacity of 12 tons per day, had to give place to the larger and better equipped furnace of Western growth, with its capacity of nearly 100 tons per day.

The Bessemerising of copper mattes, on the principle of Sir Henry Bessemer's great discovery in the manufacture of steel, was first suggested, and, to a small extent, put into practical use by John Holloway, of England, in 1878. It was left, however, for Pierre Manhes, of France, to carry the process out to a commercial success in 1880, and in 1884 the first regular converters in the United States were erected at Butte, Montana, for the Parrot Silver and Copper Company, under the direction of Manhes.* American genius has, however, improved on the original design of Manhes, and we now find converters in operation at all points where large quantities of copper matte have to be treated.

The electrolytic separation and refining of copper on a large scale dates back only a few years, and, according to a statement

* From information obtained from Peters' "Modern Copper Smelting."

which I find in the "Mineral Industry," there were in operation in the United States at the close of last year 11 electrolytic copper refineries of a total annual capacity of 198,600 tons of copper, 170,273 ounces of gold, and 21,199,200 ounces of silver, having an approximate value of 82,500,000 dol., or 16,000,000*l.* sterling.

All this has practically been accomplished within the short period of 15 years, and is a magnificent monument to Western skill, enterprise, and energy, aided by an abundance of capital.

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DIPLOMATIC AND CONSULAR REPORTS.

UNITED STATES.

REPORT ON

EDUCATION IN CHICAGO.

Presented to both Houses of Parliament by Command of Her Majesty,
DECEMBER, 1900.

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1900.

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No. 544. Miscellaneous Series.

Report on Education in Chicago, by Mr. Vice-Consul Erskine.

(Received at Foreign Office, November 5, 1900.)

General remarks.

Education in the United States, and especially in the City of Chicago, is stated to be the most practical in the world for fitting the youth of the country for the battle of life, but at the present time an attack is being made on the existing system, in which the courses have expanded to such an extent that the rudiments are neglected, and while the children are taught Latin, drawing, biology, algebra, &c., English reading, spelling, and simple mathematics are being neglected in grammar and high schools.

In September, 1900, 191 students applied at the North Western University for entrance to that institution, and of these only 26 stood the test of the English examination; this consisted of 150 simple words for spelling and the punctuation of one paragraph of simple language. These students were well up in Greek and Latin but practically ignorant of the rudiments of their own language.

The education for girls is more practical than that for boys, for having passed through the eight grades of the grammar school and the four years' course at the high school they can then, by passing the entrance examination, take a two years' course in the theory of teaching at the normal school, and on passing out become school teachers at a salary larger than that which they could command in any other branch of life, and all this at the expense of the taxpayer. Boys on the other hand, even when they have passed through the English high and manual training school, must either go to a technical school or university at their own expense to complete their education, or go out to work and compete with the unskilled labourer, who can learn a trade at the same factory as themselves, as no factory where union men are employed will recognise the training that the boys have already had, and they are set to work as if they had had no practical education whatever.

Technical education is, to a small extent, gaining a foothold in the public education, but it is to the private institutions that a boy must turn to get the best instruction.

With the tendency towards specialisation that now seems to be the rule in the workshops of the United States, apprentices are no longer in favour either with the employer or workman for many reasons, among these are that the employer prefers a man who will keep to one kind of work, and the man wants wages immediately and expects them to increase with his capacity for turning out work. The youth leaving a manual training school has a certain knowledge of handling machinery, and is able at once to earn about 15*s.* a-week, which increases rapidly if he is dexterous as nearly all is piece-work, and often he remains at the one machine for his working life.

A man's working life in Chicago is short, and he wishes to make all he can while he is at his best, and it is said that the average age of the workmen in one of the big engineering plants is only 32, and that there are few men of 45 who have not lost their speed, accuracy, or sight, to some extent, and that it does not pay a manufacturer to keep a man working an expensive machine, many costing 2,000*l.*, if he is only getting 90 per cent. of its capacity out of it.

In the present bitter struggle for manufacturing supremacy no firm can afford the luxury of keeping a man because he has served faithfully, and, it is said, it would be cheaper to pension them off than let them run the machinery, when they begin to deteriorate either in the quality or quantity of their work. They are not pensioned as a rule, unless they have been injured in some way in the employ of the firm, when they are given a place as doorkeeper or sweeper at labourer's wages.

It is to educate the boy in a manner that can enable him to make the best use of his talents that manual teaching is now given in all public schools where possible, and whilst this prepares the boy for a college where the higher branches of mechanics are taught, it also prepares the boy who cannot afford years of study for the big workshop or a business life.

In many works the unskilled workman running one or more machines and being paid by piece-work receives as much or more remuneration than the skilled mechanic who manufactured the machinery and tools the unskilled man works with, and is paid by the day from 10*s.* to 11*s.* 4*d.*

In commercial matters the same conditions have to be met, the young men and women receiving their business education, as a rule, in private business schools, and coming to their employers with a knowledge of the routine and capable of doing their work with little extra supervision.

It is now a very hard matter for a man of 45, who is out of employment, to get anything to do, for it is said that when a man has reached that age, if he is a good business man, he should have been able to grasp some opportunity, which must have presented itself and have a business of his own, be an indispensable man to his employer, or have passed his time of usefulness, while, on the other hand, if he is still capable of good work it is suspected that he cannot have worked his hardest for 25

years or he would be worn out and he is passed over for a younger man.

By the school census of 1900 there are in Chicago 347,622 children between the ages of six and 14, the age during which education is supposed to be compulsory, and 278,622 children between 14 and 21, and of these, 67,453 children were educated last year in church schools, and few were over 15. The Board of Education provides accommodation in public grammar and high schools for 220,728 children and employs 5,535 teachers at salaries of 100*l.* to 300*l.* per annum, and about 17,000 children attend private schools and Catholic academies. Number of children.

Free Schools.

The public schools are, like British board schools, free to all children of both sexes, and no religious instruction of any kind is given, and although the system has always been looked upon as the best and most practical in the world, it has increased the variety of studies to such an extent that it has been criticised.

The Board of Education was authorised in 1899 to start Kindergarten schools, and accommodation for 4,901 children has been provided; the plan has been found most successful in the poorer districts, where the children require to be taught the simple games and amusements used in the Kindergarten training, quickening their intelligence and giving them a pleasant idea of school as well as an idea of cleanliness and order, but with well-to-do children the results are not so good, the system having a tendency to make them look upon school as a continuation of their nursery games. Kindergarten.

The course of study at the grammar school is varied, and the following table gives the number of minutes per week devoted to each subject. There is school on five days:— Elementary schools.

Subject.	Grade.							
	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.
Opening	25	25	25	25	25	25	25	25
Reading	675	600	500	250	250	...	...	...
English	150	115	100	65	65	145	175	175
History	...	...	...	60	60	60	200	200
Dictation	...	50	50	60	60	60	60	60
Grammar	...	...	...	...	...	120	160	160
German or Latin	...	...	...	...	300	300	300	300
Mathematics	225	225	300	300				
Singing	75	75	75	75	75	75	75	75
Geography	...	...	...	200	250	300	...	...
Nature study	100	100	100	100	90	90	90	90
Writing	75	75	100	100	60	60	60	60
Drawing	...	60	75	90	90	90	90	90
Manual training	...	...	...	...	...	...	90	90
Physical	50	50	50	50	50	50	50	50
Recreation	125	125	125	125	125	125	125	125

Each subject is sub-divided and a great point is made of nature study, of which the following is an outline:—

September, October, November.

All Grades.

Seeds: dissemination by winds, currents, and animals.

Trees: preparation for winter as shown by leaves, sap, and buds.

Observation of plants as the season changes.

Insects: transformation.

Birds: migratory, non-migratory.

Homes and coverings of animals in relation to season.

The human skin: function and structure; comparison with that of other animals.

Special attention given to utility of structure.

Daily record of metereological conditions throughout the entire school year; dew, frost, clouds, fogs, rainfall, snow, hail, and direction of wind.

Reading of thermometer and barometer in regard to changes of weather.

For grammar grades: study of Weather Bureau maps.

Fourth, Fifth, and Sixth Grades.

Soil of school yard and surrounding country.

Erosion, sedimentation, rapids, waterfalls.

Formation of streams; their channels.

Study of pebbles: history as shown by form and material.

Seventh and Eighth Grades.

Heat: evaporation, condensation, radiation, absorption, reflection, expansion, contraction, temperature.

December, January, February.

All Grades.

Effects of freezing on plants: winter condition of plants.

Protection of buds.

Animal movements; comparison with man.

Skeleton structure.

Foods and their relation to life.

Prehension and digestion of food.

Fourth, Fifth, and Sixth Grades.

Effects of freezing and thawing upon different kinds of ground under varying conditions. Effects of frost on different kinds of stones.

Plant and animal fossils.

Seventh and Eighth Grades.

Levers in body of man and other animals; equilibrium of bodies.

Heat: sources of, capacity for, liquefaction, conduction, convection.

Air: elasticity of, pressure.

The pump: the syphon.

Liquids; capillarity, buoyance, pressure.

March, April, May, June.

All Grades.

Observation of signs of renewed life in plants.
Trees: wood, bark, mode of branching, buds.
Germination of seeds: buds, leaves, flowers, and fruit.
Study of plants: life, structure, function, and comparison.
Re-appearance of birds.
Insects: cocoons, ants, house-fly, beetle.
Renewal of animal coverings.
Respiration and circulation in man and other animals.

Fourth, Fifth, and Sixth Grades.

Corals and plants, as geological agencies.
Rock formations: dip, strike, &c.
Wells and springs: position, cause.

Seventh and Eighth Grades.

Light: incident and reflected rays, refraction.
Lenses.
Properties of matter: ductility, malleability, elasticity.
Frictional electricity.
In these grades nature study includes physiology.

These studies in nature are found to be of great use to the children, making them observe the common things around them with intelligence and giving them instruction about many things that working people have to do with in the course of their labours and enabling them to bring these theories into practical use.

This education turns out the boys into the world with a wonderful self-reliance and capacity for seizing their opportunities, and even if their spelling and punctuation leaves much to be desired they do their work to the satisfaction of their employers, many of them rise rapidly and at early ages are at the heads of departments, a position that in a European country would take years of faithful work to attain.

Great attention is also paid to teaching the children love of their country and flag, and it is impressed upon them that no other country is so free and that their flag represents justice and liberty wherever it flies. The custom of flag raising and saluting by the children is kept up at all schools at different times and speeches are made to fire the patriotism of the young.

The careers of Americans who have successfully risen through their labours and talents to prominence in wealth, politics, or science are also brought prominently before the children, who are taught they also may become a Rockfeller, a Lincoln, or an Edison.

Manual training.

The different districts have their public schools, and the central school of the district has, or is to have, a workshop to which the children from the different schools go for one and a-half hours a week to receive manual instruction.

The result is considered satisfactory and care is taken not to allow the boys to become specialists by changing the work as far as possible; it is also hoped that as the boys have to be accurate in the measuring and making of the small things they work on it will help them to be accurate in their other studies.

In many cities a selection is made of the boys who are permitted to take this course, but in Chicago all boys who have reached a certain stage in ordinary school work are to pass through a course of manual training.

The making of the working drawing is to precede the making of each model, and it is intended in time to have this instruction in the school room instead of the shop.

Experience has proved that the mechanic is not the best teacher of his craft educationally, although a few have been eminently successful.

In 1899, 13,902 boys were on the rolls of these schools and the expenses were 6*s.* 5*d.* per head.

Care has been taken in these workshops to provide everything necessary and of the best quality, but mere labour-saving tools are excluded.

The course is generally one of four years and during that time instruction is given in wood, wire, cardboard, paper pulp, and book mending and the different varieties of wood and the tools used.

Each lesson is generally given in the following order:—

First.—Theoretical instruction as to necessary material and tools and explanation of the nature and use of the particular exercise.

Second.—Drawing: Freehand sketching of teacher's model, and constructive drawing made from this sketch.

Third.—Demonstration by the teacher of the manner in which the object is to be made.

The theoretical instruction comprises descriptions of various kinds of wood and trees, their uses and reasons for same and all particulars as to methods in preparing for use and preservation.

Tools are accurately and minutely described and the history and utility of each particular part made clear. The nature, properties, origin, and manufacture of the metals is pointed out with special reference to steel in its relation to iron and how to harden it.

The sharpening and care of edged tools is taught at the time of their introduction into the work.

Great stress is laid on the instruction to teachers to train the judgment of pupils to appreciate excellence in design, proportion and adaptability to the use intended.

The object, therefore, of these schools is not to teach the youth a trade, but to make him use his hands and brain as a preparation for his future, whether it is a trade or not.

Sewing. As the classes in all the schools are composed of boys and girls, a course of cooking or sewing is taken by the latter while the boys are engaged at the manual training class.

These classes are attended by girls from 145 schools, 79 doing sewing and the remainder cooking; these classes are confined to the two highest grades as yet but, as the number of girls who leave while in the lower grades is very large, it is intended to extend the instruction. No embroidery or fancy work is allowed.

Languages.

German is taught in 215 public schools in the four upper grades and 40,003 children took this course in 1899, of whom 15,020 were of German and 12,195 of Anglo-American birth.

Vacation schools.

During the summer vacation a few schools were opened in the congested districts with a view to giving the children a systematic vacation through interest and impression, and at each of these 400 children were taken care of.

The teachers were paid 8*s.* 4*d.* per day and were assisted by many students from the normal school for training teachers and no books were used, the course being manual work for the boys such as making small useful articles, kites and toys, and sewing, darning, and mending for the girls, gymnastics, singing, sketching, study of plant and animal life and kindergarten.

Once a week the class was taken to the country where materials were collected for subsequent lessons.

The children were between the ages of 9 and 12 and were divided into classes of 100.

The cost per pupil for the six weeks, including materials, excursions, and teachers' salaries, was 13*s.* 2*d.*

Schools in stores.

Several of the large stores, where children are employed to carry cash from the counters to the office, have organised schools in the store, and make it compulsory for the children to attend for one hour each morning on their arrival. These children are all supposed to be over 14, and an oath has to be taken by the parent to that effect, but in many cases the anxiety for employment causes the law and the oath to be broken.

Night schools.

There were 37 elementary schools with 8,887 pupils open for 108 evenings, having an average attendance of 4,325 and costing 1*l.* 13*s.* 6*d.* per pupil. It is now intended to have two terms of 10 weeks, from the middle of October to Christmas, and from the second week in January to the middle of March.

The course follows the day school course but the superintendents are given latitude as to this. The hall can be used for a lecture one night a week. Particular stress is laid on English and the use of that language. Hours 7 to 9.

All material is provided free and the Board of Education supplies supplementary reading matter, mainly biographies, history, and geography. Day scholars are not admitted, and a regular attendance of three nights a week is required.

High schools.

Any child who has passed through the 8th grade of the grammar school can attend the public high school, and while some children enter at the age of 13 the average age at entrance is 15. The number who graduated in 1899 after a four years' course was 1,160, 307 boys and 853 girls, or 26 per cent. of the boys and 74

per cent. of the girls who had entered four years before; and of these 281 intended going to some university, and 579 to the normal school to be teachers. The remainder were to study art, music, law, or medicine, and only 10 per cent. had no future decided upon.

The high school course is as follows:—

First Year.—Latin or German, rhetoric and English composition and home reading, algebra, physiography, physiology, drawing, vocal music, and physical training.

Second Year.—Latin, Cæsar, with prose composition and sight reading, or German or French; Greek; English classics; essays; home reading; plane geometry; biology; drawing; vocal music; and physical training.

Third Year.—Latin, Cicero, with prose composition and sight reading; German; French; Greek, with prose composition and sight reading; physics; history; history of literature; English classics; essays; home reading; higher algebra; solid geometry; plane trigonometry; drawing; vocal music; and physical training.

Fourth Year.—Latin, Virgil, with prose composition and sight reading; German; French; Greek, with prose and reading; chemistry; civil government; political economy; history of literature; essays and home reading; history; drawing; vocal music; and physical training.

This course takes in a very great deal and the common subjects of education which have suffered from want of attention in the elementary school are not corrected.

At the entrance examination for the North Western University of Chicago, held in September, 1900, out of 191 students, representing 107 different high schools, only 26 satisfied the examiner in English as to their knowledge of the rudiments of that language.

The test consisted of spelling 150 words, such as proceed, excitement, ammunition, dilapidated, similarity, development, diminutive, &c., of which number from one to 58 were misspelt by the candidates, and only 43 could punctuate.

The candidates passed satisfactorily in Greek and Latin.

Languages. About 9,500 pupils attend the high schools, and of these 70 per cent. study Latin, 27 per cent. German, 17 per cent. French, while only 12 per cent. take Spanish. The number studying Greek is decreasing year by year, only 225 now taking it.

Night schools. There were seven schools open in the evening for two hours under the same regulations as the grammar night schools, with an attendance of 2,249.

Manual high school. At present there is only one high school in which manual training is given. This has been in existence for about 10 years and is carried on in an old factory building.

It has been hoped for several years that the Board of Education would be able to build three high schools, one for each division of Chicago, devoted to manual training, but as yet the money has not been at their disposal. Each of these schools, to accommo-

date 1,000 pupils, will cost about 30,000*l.* to build, besides the cost of sites and apparatus.

There are at present 632 pupils in the school and the superintendent has to refuse many applications as the workshops are inconveniently crowded, the lathes and benches being very close together.

The qualification is the same as for other high schools, and the course extends over three years, but by the end of the first year about 50 per cent. of the students have withdrawn from incapacity or having to earn a living, and at the end of the course only about one-third of the original class remains.

The school must be looked upon as preparatory for the engineering course at the universities and technical schools, although the majority of the boys passing through the school cannot afford any more time to their education and at once start to work in some large workshops. Some boys do remarkably well and get good salaries and responsible positions a year or two after leaving school.

The course of training is as follows:—

First Year.—Academic: Algebra, 4 hours per week; biology, 4 hours for 30 weeks, or physiology for 10 weeks; rhetoric and composition, 4. School term, 42 weeks.

Manual training: Mechanical drawing, 4; freehand, 4; wood-working, 10; and lectures on wood.

Second Year.—Academic: Geometry, 3; physics, 3; general history, 3; English or French, 3; and book reviews.

Manual training: Mechanical drawing, 4; freehand drawing, 1; foundry and blacksmiths' work, 10; lectures on iron.

Third Year.—Academic: Chemistry, 3; English or French, 3; book reviews, solid geometry, 12 weeks, 3; higher algebra, 12 weeks, 3; plane trigonometry, 16 weeks, 3; civil government, 16 weeks, 3; political economy, 24 weeks, 3.

Manual training: Mechanical or architectural drawing, 1; freehand drawing, 1; machine-shop work, 10; lectures on machinery.

The students have to pay for their books and supply themselves with the mechanical drawing outfit, but all material and machinery is provided by the Board.

In the third year the students are advanced enough to build small engines.

During the second and third year those who contemplate entering a university or technical school have to study French, as it is necessary to have gone through a two-year course in some modern language besides English.

In the third year of the course students who are not taking French, and do not care for mathematics, are allowed a course of book-keeping, shorthand, and typewriting instead, and about one-fourth of the senior class avail themselves of this rule which enables them to follow a commercial career.

Commercial course in high schools.

In September, 1900, a trial was made of teaching stenography in the high schools and about 270 entered for this course, which

number it is believed will increase to about 1,000 at the beginning of next year.

While it is considered that the present course is most desirable for anyone intending to take up one of the professions or teaching, it is not of so much value to one wanting a business career, and it is intended, when funds are available, to build a commercial high school in a central part of the city where the course would comprise languages, science, mathematics, political and commercial geography, civil government and political economy, commercial law, book-keeping, phonography, typewriting, mechanical and freehand drawing.

Normal school.

The normal school is for the theoretical instruction of teachers and a course of two years has to be taken. An examination for those wishing to enter is held annually and in 1898 there were 305 candidates of whom 73 were successful. In 1900 one high school sent up 30 candidates and only three passed.

After the course is finished a year's service as a cadet teacher is required to make the student eligible for a place as a public school teacher.

In a report made by three examining physicians for the normal school it is stated :—

"We find that the strength of the students has been overtaxed by excessive detail and would advise a return to simpler methods of education. More is to be feared from overstrain in educational institutions than from the ravages of infectious diseases. Those who were examined were all high school graduates or former pupils.

"In a general way the pupils showed the results of a lack of physical exercise, which is certainly necessary to compensate for the enormous strain imposed by our modern educational system upon the developing body of the young student."

Reformatory schools.

The principal reformatory school for the State is situated outside the city, but there is a school attached to the House of Correction where the education is under the control of the Board of Education and the custody and supervision out of school hours under the warders of the Bridewell.

The boys are committed by the court especially appointed to try juveniles under 16 and are now held indefinitely, some of those who have been in longest, nearly a year, now being allowed to go out to work returning each evening to the school.

Until this year the benefit due to the discipline and manual teaching has been largely counteracted by the short sentence imposed. In 1896, 1,200 passed through the school with an average sentence of 21 days; in 1897, 30 days; in 1898, 56 days; and in 1899, 80 days.

There are now 294 inmates and the building is crowded.

Girls are sent to a home outside the city.

Cottage home school.

A school is being built to accommodate 500 children, boys and girls, in cottages, each of which is to be occupied by 30 children at most. To this school truants and badly-behaved children will be sent by the juvenile court, and here by discipline, drill,

gymnastic exercises, cleanliness, bathing, housework, sewing, cooking, manual labour in workshop, farm work and gardening combined with elementary education, physical and mental reconstruction will be carried on.

Each cottage is to have a kitchen, dining room, sitting room for children, sitting room for caretaker and dormitory, and, while the girls will be instructed in all household work, most of the meals will be supplied from a central kitchen by covered waggon to lessen the expense.

There are four such schools in the Eastern States which were inspected by members of the Board from Chicago and they report that the average expense per head per annum in these amounted to 35*l.* 5*s.* 6*d.*, while in Chicago it will be more, owing to the higher wages and more expensive food.

Church Schools.

Only two of the many different churches in Chicago have made any real attempt to furnish their children with an education which combines religion with secular instruction. These are the Catholic and Lutheran Churches which educate about 70,000 children and receive no State aid of any kind.

Taking the expenses for building public schools for 1,000 pupils at 30,000*l.*, which is about the average price of schools now being built, not taking into account the cost of sites, the Board of Education would require an immediate sum of more than 2,000,000*l.* if the church schools were abandoned and would have to increase their supply of teachers at an annual cost of 300,000*l.* besides the purchase of sites and school furniture.

Nearly all Catholic parishes have their schools, but each school is conducted by the priest in charge in such manner as seems to him likely to have the best results and no diocesan report is obtainable, but the cost of teaching appears never to exceed 2*l.* per child and the interest on the money invested in the school buildings to 5*l.* 11*s.* 4*d.* per child, both being much below the cost in the public schools. Catholic parochial schools.

These schools labour under several disadvantages, the want of State aid, poverty of parents causing early withdrawal of children, &c.

Most of the schools are taught by members of some religious community, many of them having no plan for the theoretical teaching of their members.

Notwithstanding these drawbacks these schools have earned for themselves a name for very thorough teaching in all branches, special care being given to the elementary work, and more careful individual attention being paid to the children and their different characters being carefully considered. Another advantage claimed for them is the separation in school and play of the boys and girls and in many schools the instruction of the boys by men only.

The course of education differs in accordance with the requirements of the district, some closely following the public school course while others are much more elementary but generally the same books are used so as to save expense to children who may have been in the public schools and because those who go to high or normal schools must compete with and should have the same training as the public school children.

In all schools religious doctrine is taught, and, where all the children will go to work straight from school, the upper grade is given a course in book-keeping so as to enable them to work their way up if they wish.

Many of the parishes have extremely poor people living in them and they have to send their children out to work at an early age, and some parishes have even to provide clothing to enable the children to make a decent appearance.

More than half the children leave the parochial school before the age of 14.

No manual training has been given in these schools owing to want of time in school hours, and the great expense in fitting up a workshop.

In 1899, 54,837 children attended parochial schools and this number has increased to about 60,000 in September, 1900. The teachers number 122 male and 987 female, mostly members of religious orders.

It is estimated that about one-fifth of the Catholic children attend the public schools where no religion is taught because the parents consider the public school an American institution to which everyone should send their children.

The fees, paid by parents who can afford it, vary from 2*s.* 1*d.* to 4*s.* 2*d.* per month, but not half the children pay anything.

High schools. There are several high schools now in connection with the parochial schools, although many children go to the public high and manual training schools, where very much the same course is given.

These schools have been very successful in preparing girls for the normal school, one having recently passed 25 out of 27 candidates, while a high school passed 3 out of 30 candidates, and it is reported that 60 per cent. of the public school teachers are Catholics.

The percentage of loss during the four years' course is about the same as in the public high schools, half the students leaving during the first year.

The fees at the high school are, when possible, 8*s.* 4*d.* per month, but no student is refused because of inability to pay.

Commercial Course. St. Ignatius College, 440 students, conducted by the Jesuit Fathers, and St. Vincent's College, 140 students, recently founded by the Lazarist Fathers, give an academical and a commercial course for boys only.

The academical covers seven years and prepares the student for the professions, but the Fathers in charge discourage boys taking the whole of this course unless they have a definite profession in view in which the education will prove of value.

In the commercial course no Latin or Greek is taught, but a choice is given of French, German, or Spanish with Christian doctrine, bookkeeping, typewriting, stenography, history, science, algebra and geometry, and lasts four years.

The following is the commercial course given at the College of St. Ignatius:—

Fourth Commercial Class (*1st Year*).

Christian Doctrine.

English.

Precepts—Goold Brown—Etymology and analysis of sentences.

Models—Choice selections pointed out or dictated by the Professor.

Practice—Exercises on objects with attention to the correct use of words, &c. Easy compositions.

Reading—Excelsior Fifth Reader, and all books used in class. Daily practice.

Spelling—Reed's Word Lessons, and other books used in the class.

Arithmetic.

1st Term: Ray's New Practical—Common and decimal fractions repeated; metric system; four cases of percentage; fractions included.

2nd Term: Percentage repeated, with applications, to discount. Copious exercises from other authors.

Accessory Branches.

History: Gilmour's Bible History. Geography: Appleton's Standard Higher, from beginning to Central America. Elocution: once a week. Penmanship: daily practice. Zoology.

Third Commercial Class (*2nd Year*).

Christian Doctrine.

English.

Precepts—Goold Brown—Syntax and analysis of sentences.

Models—Choice selections pointed out or dictated by the Professor, analysed and memorised.

Practice—Exercises on objects with special attention to arrangement of words and amplification of sentences. Easy compositions. Daily exercises in reading and spelling from the text-books used in class.

Arithmetic.

1st Term: Ray's New Practical. Percentage repeated; discount to ratio included.

2nd Term: Ratio repeated to end. Copious exercises from other authors.

Accessory Branches.

History: United States History, Sadlier. Geography: Appleton's Standard Higher—South and Central America, Europe, United States reviewed in studying history. Book-keeping. Elocution: once a week. Penmanship: daily practice. Botany.

Second Commercial Class (3rd Year).

Christian Doctrine.

English.

Precepts—Coppens' Introduction—From beginning to figures of speech.

Models—Choice selections illustrative of precepts. Irving's "Rip Van Winkle" and "Legend of Sleepy Hollow"; Goldsmith's "Deserted Village" and "Traveller"; easier selections from Longfellow, &c.; reading of choice selections from Catholic authors.

Practice—Imitations. Original exercises, including easier forms of letter-writing, with special attention to sentence-building, punctuation, &c.

Arithmetic.

1st Term: Ray's New Practical, repeated from Fractions. Special attention to business transactions.

2nd Term: Work of 1st Term continued. Copious exercises from other authors.

Accessory Branches.

History: Modern, Fredet—Beginning to Crusades. Geography: Appleton's Standard Higher—Asia, Africa, Oceania, with Physical Geography of 1st Part. Book-keeping. Phonography. Typewriting. Commercial Law. Elocution: once a week. Penmanship: daily practice.

First Commercial Class (4th Year).

Christian Doctrine.

English.

Precepts—Coppens' Introduction—Figures, varieties of style, letter-writing, narration, and description, novels, &c.

Models—Choice specimens of minor compositions in prose and verse. Scott's "Lady of the Lake"; Longfellow's "Evangeline" and "Tales of a Wayside Inn"; selections from Irving; selections from standard novelists; models from Scoone's "Three Centuries of English Letters"; Knight's "Half-hours with the Best Letter-writers"; Fields' "Yesterdays with Authors"; readings from Catholic authors, &c.

Practice—Exercises in minor species of composition, especially letter-writing, with particular attention to business letters.

Arithmetic and Algebra.

1st Term: Practical arithmetic applied to business transactions; Wentworth's "Elements of Algebra," to Fractions included.

2nd Term: Practical arithmetic; Wentworth's "Elements" from Fractions to Radical Expressions included.

Accessory Branches.

History: Modern, Fredet—From Crusades to end. Geography—Physical, Mitchell's. Book-keeping. Phonography. Typewriting. Commercial Law. Elocution: once a week. Penmanship.

The De La Salle Institute, conducted by the Christian Brothers has a preparatory followed by a commercial course of four years much the same as at the other schools.

At all these schools the fees are 8*l.* a year for day scholars and 60*l.* for boarders.

Lutheran Church schools.

The Lutheran Church schools are parochial schools conducted at the expense of the German Lutheran churches with a fee of 2*s.* 1*d.* per month when possible.

The course consists of Danish or German and English with the usual public school course and religious instruction.

They have no secondary schools in Chicago, but several in other States where the boys and girls can complete their education and those who wish study for the Ministry. Many of the children attend the high schools in Chicago.

152 male and 23 female teachers are employed.

Catholic children are committed by the Juvenile Court to the custody of a reformatory school outside the city for boys and to the Home of the Good Shepherd for girls, where laundry and other similar work is taught.

Private Schools.

There are many private schools in Chicago, some of which are for both boys and girls, where a general education is given and where the fees vary from 15*l.* to 60*l.* per annum for day scholars and 60*l.* to 200*l.* for boarders.

A course preparatory for the universities is given and some of them have a workshop provided where carpentry can be learnt.

Manual training.

There are two schools in Chicago where manual training is used in conjunction with ordinary education, one being attended by boys whose parents can afford to send them to a University, while the other is built in one of the poorest districts.

Chicago manual training school.

The Chicago manual training school was established in 1883 by the Chicago Commercial Club, and afterwards handed over to the University of Chicago, which, however, at the present time

gives it no pecuniary assistance, and was the first school of the kind in the Western States.

It is a preparatory school to the universities and technical schools, and not a school for the teaching of trades, the manual training being used as a means of awakening the student's interest and giving him systematic change from ordinary education which in English schools is done to a great extent by games. Here games are played by only a select few, the others taking no part in them except as spectators.

The school is entirely dependent for support on the fees paid by the 280 students, and which are for the preparatory, 12*l.* per year; junior, 16*l.*; middle, 20*l.*; and senior, 24*l.*

There are 12 teachers in the school who receive as salaries 3,750*l.* per annum, and the directors have been fortunate in getting men who have had college training as well as practical shop work as instructors in the manual division of the school.

The total expenditure for the year 1899 amounted to 5,208*l.* 10*s.* 10*d.*; made up by teachers' salaries, 3,750*l.*; administration, 583*l.*; material, 100*l.*; the remainder being for repairs, heating, lighting, janitors, and engineers' wages. Cost per pupil 18*l.* 12*s.* a year.

About 110 boys enter the school annually and of these about one-half pass through all the grades, three-quarters of those failing to do so being dropped for bad scholarship generally, owing to inferior grounding at elementary schools.

Candidates for admission to the junior year must have certificates that they have passed through the 8th grade of a grammar school, or pass an examination, but there is a preparatory class of a year for those without certificates.

Pupils furnish their own books, drawing instruments, and material, aprons, overalls, and small tools; shop-books and material are provided by the school; the cost of books is from 16*s.* to 20*s.* for each class, drawing instruments, 16*s.*, and drawing material 20*s.* per year. Besides this, a deposit of 1*l.* is made by every pupil for laboratory expenses, and as an offset against possible damage to tools, apparatus, &c., which is returned less assessment, if any, when the pupil leaves school.

The founders arranged for a certain number of boys who have not the means but show inclination for the work to be taken at a reduced fee.

The following is the school equipment:—

Wood Rooms.—48 carpenters' benches;* 6 cabinetmakers' benches;† 28 speed lathes;‡ 1 patternmakers' lathe,† 42-inch swing, 8-foot bed; 2 circular saws; 1 band-saw; 1 planer; 2 jig saws;† 2 grindstones; bench, lathe, and general tools.

Foundry.—2 brass furnaces; crucibles, troughs, flasks, trowels, rammers, sieves, and other apparatus.

Forge Rooms.—30 forges; 30 anvils; 1 drill press; 1 emery

* 24 made by pupils of school. † Made by pupils of the school.
‡ 4 made by pupils of the school.

wheel; 1 shears; 3 vices; tongs, hammers, fullers, flatters, swages, &c.

Machine Shop.—17 engine lathes, from 14-inch swing, 6-foot bed to 20-inch swing, 8-foot bed; 2 speed lathes; 1 planer, 6-foot bed; 1 shaper; 2 drill presses;* 1 drill press; 1 universal milling machine; 1 cutter grinder;* 1 upright 8 horse-power steam engine* for tests; 1 grindstone; 1 emery grinder; 24 benches; 24 vices; lathe and vice tools, such as chucks, boring-bars, taps, dies, hammers, chisels, files, &c., also 1 forge, 1 anvil.

Power is supplied by a Corliss engine of 52 horse-power and by two steel boilers.

The physical and chemical laboratories are equipped for pupils' work.

The drawing-rooms are provided with numerous models and casts.

The reference library and the library of the Blatchford Literary Society contain about 1,000 volumes.

* Made by pupils of the school.

Courses.	Academic Studies.	Weeks.	Drawing.	Weeks.	Shopwork.	Weeks.
	PREPARATORY (OR HIGHEST GRAMMAR) YEAR.					
All	Arithmetic	40	Freehand (2 hours per week) ..	40	Joinery (3 hours per week) ..	40
All	History, U.S. and English (Montgomery)	40				
All	English language	40				
I, II	Latin, first year, optional ..	40				
III	„ „ (Bennett) ..	40				
	JUNIOR YEAR.					
All	Elementary algebra (Wentworth's School)	40	In pencil: freehand construction and perspective, groups of models	20	Joinery	10
I, II	Physiology (Martin)	20	Pastel and water colour		Turning	10
I, II	Plane geometry (Van Velzer and Shutts)	20	Mechanical drawing in geometric construction, parallel and angular perspective ..	20	Cabinet-making	10
All	English	40	Text-book		Pattern-making	10
I, II	Latin, first year, optional (Bennett)	40	Geometrical drawing (Faunce)		Proper care and use of tools. (7½ to 10 hours per week.)	
III	Cæsar and prose composition (Jones' Prose)	40	(5 hours per week.)			
III	Greek, first year (White) ..	40				

Middle Year.

All	Plane and solid geometry (Van Velzer and Shutts	30	Orthographic and Isometric projection, including intersection and development of solids, shades, and shadows; machine details; design, especially in wrought-iron	40	Moulding and casting	8
II	Plane trigonometry (Crawley)..	10			Forging, welding, tempering, including the making of smiths' and lathe tools, chisels, &c. ..	30
I, II	Physics (Hall and Bergen) ..	40				
I, II	General history (Myers) ..	40	(5 hours per week.)		Soldering and brazing	2
	Cæsar and prose composition ..	40			(7½ hours per week.)	
III	Virgil or Cicero	40				
III	Anabasis and Greek prose ..	40				
	French (Joynes' Grammar) ..	40				
All	English (Texts)	40				

Senior Year.

I	Book-keeping (O. M. Powers) ..	16	Courses I and II.		Courses I and II.	
	Rhetoric (Cairns)	24	Machines from measurement	40	Chipping, filing, and scraping; fitting; turning; drilling; planing. Study of machinery. Management and care of steam engines and boilers	40
I	Civil government	8	Text-books:			
	Physiography (Tarr)	12	Gearing—George B. Grant; machine design—Low; descriptive geometry*—Faunce			
	Political economy (Walker) ..	20				
I, II	Chemistry (Remsen)	40	or			
III	Physics (Hall and Bergen) ..	20	Architectural perspective and details; building from measurement	40	(7½ to 10 hours per week.)	
II, III	College algebra (Wells).. ..	20				
II	Spherical trigonometry (Crawley)	10	Text-books:—			
II	Cicero or Virgil (Joynes' Gram.)	40	Descriptive geometry*—Faunce; history of architecture—Hamlin			
	French (Texts)		(5 hours per week.)			
III	Cicero or Virgil	40			Instruction is given each year in the production, properties, and uses of the shop materials used in that year.	
III	Homer	40				
	French	40				
All	English	40	Freehand and measurement sketches, in pencil, pen and ink, or in colour, throughout the course of 3 years.			

Note.—Course I, business; Course II, technological; Course III, college preparatory.
* Elective.

The following alterations in this course have been suggested: the elimination of Latin, physiology, and trigonometry, making French compulsory and thorough, adding modelling in clay, and devoting more time to English in all branches.

Since the school has been in existence, 693 scholars have passed through the full course, and of these 140 are at universities and technical schools, six are employed as designers, 35 foremen, 32 draughtsmen, 14 machinists, 18 electricians, nine chemists, 79 engineers, 61 superintendents, 17 teachers, 21 lawyers, four physicians, 13 architects, and 118 clerks, book-keepers, &c.

This school has been thoroughly satisfactory in its result, its students taking a good place at the universities, and the teachers taking a keen interest in their work and pupils.

Jewish manual training school.

The Jewish Manual Training School, which is built in the "Ghetto" of Chicago, is in probably the most congested district of the city, and was founded by some charitable Jewish ladies for the benefit of the women and children, but in 1890 it was made into a regular school, and subscriptions were raised for the present building, which cost 16,250*l.*, including furniture and appliances, another 2,000*l.* being paid for the site.

The school is free, accommodates 650, the majority Russian Jews, books and material supplied, unsectarian, the only condition being poverty, and has had a remarkable effect on the thrift of the people whose children attend it.

The children are received in the kindergarten at three, and in the elementary school at six, and over half remain until 14. Eight years ago 50 entered the school, and 29 of these passed from the highest grade in 1900, 13 continuing their education, at high and business schools, 13 going to work, and the other three remaining at home. This average is remarkable when the poverty of the parents is considered; the average of the public schools is about 15 per cent.

Besides the usual elementary subjects, manual training is taught in all grades, not to educate artisans, but as an invaluable and necessary aid to the brain of children with such surroundings.

The Mechanical Department teaches:—(1) Simple exercises in wood and cardboard; (2) bench work (wood) for boys of grammar grades; (3) machine work; (4) simple pattern-making and moulding; (5) sewing for girls of all grades, this course includes dressmaking, cutting and fitting; (6) cooking for the two highest grades.

The Art Department:—(1) Modelling, all classes; (2) free-hand drawing, all classes, from models, no copies allowed; (3 and 4) painting and designing in grammar grades.

In addition one hour twice a week is given to work in the gymnasium for all children, and the boys are given 160 minutes a week in the shops, the girls the same for sewing, which is divided into two lessons.

The workshop is used by the boys after school hours, and helps to keep them off the streets and occupy their minds.

German is taught in the three highest grades, as well as physiology, teaching cleanliness and care of the body.

There are 25 teachers, whose salaries average 12*l.* 10*s.* per month, and the total cost of the school is 4,167*l.* per year, an average of 6*l.* 18*s.* 1*d.* per pupil.

Technical Education.

There are in Chicago two technical schools, which differ in their ways of teaching, one, the Lewis Institute, on lines something like the Polytechnic in London, and the Armour Institute of Technology, following the German system.

Much interest is being taken in technical training, and every effort is being made to train young men for the positions which command large salaries, and which are now to a great extent filled by Germans.

Mr. Victor C. Alderson, Dean of the Armour Technical College, who last year visited most European schools where technical education is provided, delivered an address before the Central Railway Club at Buffalo in March, 1900, and chose as his subject, "The Economic Aspect of Technical Education," and among other things said: "The continued growth and prosperity of any nation depends upon the technical education of its people. The man who does most towards increasing the general material prosperity of a country, who calls to the aid of mankind all the forces of nature, is the man of applied science usually called an engineer. The war in South Africa or the Philippines is less fatal to the working man than the ceaseless competition of similar working men in other quarters of the globe. It is this unremitting rivalry between workers of the same class the world over that makes necessary the cultivation of the working man's powers by means of technical training. I believe that the most important element in giving one nation industrial supremacy over another is the technical education of its people. Foreign agents, Consular Reports, natural inventive ability, keen business sense, all aid, but they are individually and collectively inferior to the power that comes from having the workman, the superintendent, and the manager, all carefully trained to do his own moiety in a superior manner. Inasmuch as England is without a general public school system as we know it, her system of technical training is unorganised, unco-ordinate, and very largely what we call trade school instruction. Furthermore, it has its persistent enemy, that English bugbear, the practical man, without a trace of theory in his composition, who blocks the advance of technical training in every way he can. We should not rest satisfied with the inventive genius of a Fuller, a Whitney, or an Edison, but should recognise that permanent industrial success will only come when every workman, foreman, and superintendent is trained to the highest degree of efficiency. Our best institutes of technology should train men as well for the profession of engineering as they are trained in Germany or in Switzerland."

Those engaged in teaching technology in the United States believe that no amount of practical knowledge can make up for want of theoretical knowledge, and their aim is to bring the schools up to the standard of Charlottenburg (Berlin) and Zurich, and to send the men into the world perfect in the theory, and with sufficient knowledge of the practice of engineering to superintend the practical men, not to turn out mechanics or men who can only employ their hands. These men have enough practical shop work to be able to correct faults and detect any that may be made.

One of the great faults found with the English system of technical training by Mr. Alderson is the number of students attending night classes who have already worked all day, and he makes a strong point that it requires a man's best work and clearest and freshest brain to give a proper response to this kind of instruction, and he should have no other occupation.

Armour Scientific Academy.

The Armour Scientific Academy was founded by Mr. Philip D. Armour, of Chicago, and prepares students for the universities and schools of technology, and applicants for admission must have passed through the eighth grade of the grammar schools, or pass an examination in English, arithmetic, and United States history.

The course lasts four years, and prepares students for the profession they have chosen, except in the fourth course, which covers three years, and prepares for the technical school.

No manual training is given, but laboratory work is given, and systematic athletics are encouraged.

The fees are 12*l.* per annum, but the directors are always ready to consider the cases of needy boys and girls struggling for an education. A laboratory deposit of 1*l.* is required of students in chemistry, which is refunded, after a deduction for breakage, at the end of the year.

COURSE OF INSTRUCTION.

(The figures denote the number of recitation or laboratory periods per week. Recitations are one hour in length. Laboratory periods are two hours in length. In mathematics (4th year) the different subjects are taught in the autumn term, winter term, and spring term respectively.)

Year.	Course I.—University.		Course II.—Medical.		Course III.—English.		Course IV.—Technical.	
	Subject.	Period.	Subject.	Period.	Subject.	Period.	Subject.	Period.
I	Latin	5	Latin	5	Algebra	5	Algebra	5
	Algebra	5	Algebra	5	English	5	English	5
	English	5	English	5	Greek and Roman history	3	English and American history	3
	Greek and Roman history	3	Greek and Roman history	3	Freehand drawing (elective)	2	English readings	2
							Freehand drawing	2
		18		18		15		17
II	Cæsar	5	Cæsar	5	Plane geometry	5	French or German	5
	Plane geometry	5	Plane geometry	5	English composition	3	Plane geometry	5
	English composition	3	English composition	3	English readings	2	Chemistry	5
	Mediæval and modern history	3	Mediæval and modern history	3	Mediæval and modern history	3	English composition	3
	Freehand drawing (elective)	2	Freehand drawing (elective)	2	Freehand drawing (elective)	2		
		18		18		15		18
III	French or German	5	French or German	5	French or German	5	French or German	3
	Chemistry	5	Chemistry	5	Chemistry	5	Physics	5
	English literature	3	English literature	3	English literature	3	Algebra review	5
	Cicero and Latin composition	4	Zoology	4	Zoology	4	Solid geometry	
	English and American history through the colonial period	3	English and American history through the colonial period	3	English and American history through the colonial period	3	Trigonometry	
							Mechanical drawing	2
							English literature	3
							Chemistry review (elective)	1
		20		20		20		19
IV	French or German	3	French or German	3	French or German	3		
	Physics	5	Physics	5	Physics	5		
	Algebra review	5	Botany	4	Algebra review	5		
	Solid geometry		Mechanical drawing (elective)	2	Solid geometry			
	Trigonometry or botany		American history since the colonial period; civil government	3	Trigonometry or botany			
	Virgil	3	American literature	2	American history since the colonial period; civil government	3		
	American history since the colonial period: civil government	3			American literature	2		
	American literature	2			Mechanical drawing (elective)	2		
		21		19		20		

Armour Institute of Technology.

The average age of students entering the Armour Institute of Technology in 1900 was 19 years and 5 months. The course is four years, and the first class graduated in 1897. Admission is for those who have passed through the High School, or take an examination in mathematics, mechanical drawing, chemistry, English, German, and history.

During the years, since 1893, that the Institute has been carried on, 60 per cent. of those entering have graduated, 30 per cent. have obtained work before they have taken the full course, and only 10 per cent. have fallen by the way.

Many of the graduates have secured positions of great responsibility, and have shown in practice the benefit they have derived from the system at this school.

Enough shop work is given to make the students well acquainted with the tools and machinery, enabling them to know if work is properly done, while care is taken not to dwarf their minds by training in one branch to perfection, and leaving them as experts in one trade only.

The majority of the mechanics in the workshops in Chicago are Europeans, who have thoroughly learnt their trade by apprenticeship, while the superintendents and managers are Americans, and in cases where energy of mind and body are necessary are surprisingly young for such positions.

The cost of building the Armour Institute of Technology exceeded 50,000*l.*, but it is built more expensively than is absolutely necessary, and the running expenses are unknown to anyone but the directors, who are practically composed of Mr. Armour's family.

The following is the course of instruction:—

Mechanical Engineering.

FRESHMAN YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
College algebra and elementary calculus	5	..	..
Analytical geometry and elementary calculus	..	5	5
Analytical chemistry	6	6	6
Descriptive geometry	5	5	5
Carpentry and turning	6	..	..
Pattern making	..	6	6
French	3	3	3
Scientific German	2	2	2
English composition	2	..	..
Rhetoric	..	2	..
Literature	..	..	2

SOPHOMORE YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Calculus	5	5	..
Differential equations	..	..	5
Physics	5	5	5
Nineteenth century history	2	..	..
Constitutional history of the United States	..	2	..
Economic history of the United States	..	..	2
Forging	3	3	..
Chipping and filing	..	..	3
Kinematics and machine design	2	2	2
Machine drawing	6	6	6
Steam-engine development	2	2	..
Engineering chemistry—			
Lecture	1	1	..
Laboratory	3	3	..
Surveying—			
Lecture	..	..	1
Field practice	..	..	3
Inspection visits	..	..	..

JUNIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Mechanics	3	3	..
Thermodynamics	..	..	3
Physical laboratory	3	3	3
Economics	2	2	2
Resistance of Materials	4	..	..
Graphics	..	3	..
Hydraulics	..	..	3
Machine tool work	6	6	6
Mechanical laboratory	3	3	3
Valve gears	3	..	..
Valve gear drawing	6	..	..
Governors	..	4	..
Valve gear and governor drawing	..	6	..
Boilers	..	..	4
Governor and fly-wheel drawing	..	..	6
Optional—			
Mathematics	2	2	2
Inspection visits	..	..	..

SENIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Logic	2	..	..
Psychology	..	2	..
Philosophy of the inductive sciences	..	..	2
Business law	..	..	2
Hydraulic machinery	2	..	..
Gas engines	..	2	..
Shop design	3	..	..
Power plant design	..	3	..
Railway engineering	..	..	3
Applied thermodynamics—			
Injectors, Compounding of engines	3	..	..
Hirn's analysis, Compressed air, Mechanical refrigeration	..	3	..
Heating and ventilation	..	..	3
Electrical engineering	2	2	2
Electrical laboratory	6	6	6
Mechanical laboratory and thesis	6	6	6
Engineering drawing and thesis	6	6	6
Optional—			
Mathematics	2	2	2
Inspection visits	..	..	..

ELECTRICAL ENGINEERING.

FRESHMAN YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
College algebra and elementary calculus	5	..	..
Analytical geometry and elementary calculus	..	5	5
Analytical chemistry	6	6	6
Descriptive geometry	5	5	5
Carpentry and turning	6	..	..
Pattern making	..	6	6
French	3	3	3
Scientific German	2	2	2
English composition	2	..	..
Rhetoric	..	2	..
Literature	..	..	2

SOPHOMORE YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Calculus	5	5	..
Differential equations	..	..	5
Physics	5	5	5
Nineteenth century history	2	..	..
Constitutional history of the United States	..	2	..
Economic history of the United States	..	..	2
Forging	3	3	..
Chipping and filing	..	..	3
Kinematics and machine design	2	2	2
Machine drawing	3	3	3
Theory and practice of electrical measurements	3	3	3
Electrical laboratory	6	6	6
Inspection visits	..	..	..

JUNIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Mechanics	3	3	..
Thermodynamics	..	..	3
Physical laboratory	3	3	3
Economics	2	2	2
Resistance of materials	4	..	..
Graphics	..	3	..
Hydraulics	..	..	3
Machine tool work	3	3	3
Power plants	2	2	2
Drawing and designing	3	3	3
Theory and practice of electric and magnetic measurements	3	..	..
Theory of the dynamo	..	3	..
Theory of alternating currents	..	..	3
Electrical laboratory	6	6	6
Optional—			
Mathematics	2	2	2
Inspection visits	..	..	..

SENIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Logic	2	..	..
Psychology	..	2	..
Philosophy of the inductive sciences	..	..	2
Business law	..	..	2
Hydraulic machinery	2	..	..
Gas engines	..	2	..
Engineering chemistry—			
Lecture	1	1	..
Laboratory	3	3	..
Surveying—			
Lecture	..	..	1
Field practice	..	..	3
Mechanical laboratory	3	3	3
Direct current machinery	3	..	..
Alternating current machinery	..	3	1
Electric railways	..	..	2
Central station design	6	..	..
Electrical machinery design	..	6	..
Engineering design—			
Thesis	..	..	6
Electrical laboratory	9	9	3
Electrical laboratory—			
Thesis	..	..	6
Optional—			
Mathematics	2	2	2
Inspection visits	..	..	..

CIVIL ENGINEERING.

FRESHMAN YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
College algebra and elementary calculus	5	..	..
Analytical geometry and elementary calculus	..	5	5
Analytical chemistry	6	6	6
Descriptive geometry	5	5	5
Carpentry and turning	6	..	..
Pattern making	..	6	..
French	3	3	3
Scientific German	2	2	2
English composition	2	..	..
Rhetoric	..	2	..
Literature	..	..	2
Surveying	..	..	6

SOPHOMORE YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Calculus	5	5	..
Differential equations	..	..	5
Physics	5	5	5
Nineteenth century history	2	..	..
Constitutional history of the United States	..	2	..
Economic history of the United States	..	..	2
Kinematics	2	2	..
Surveying	3	..	..
Advanced surveying	..	..	4
Drawing and field practice	4	..	6
Descriptive astronomy	2	2	..
Stereotomy	..	3	..
Construction and adjustment of instruments	..	2	..
Topographical drawing	..	6	..
Mechanics of engineering	3	3	3
Inspection visits	..	..	..

JUNIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Mechanics	3	3	..
Physical laboratory	3	3	3
Economics	2	2	2
Resistance of materials	4	..	..
Hydraulics	..	..	3
Power plants	2	2	2
Mechanical laboratory	3	3	3
Masonry construction	3	..	..
Railway economics	..	4	..
Drawing	6	..	..
Engineering designing	..	6	6
Stresses in framed structures	4	4	4
Method of least squares	..	..	3
Field practice	..	..	6
Optional—			
Mathematics	2	2	2
Inspection visits	..	..	..

SENIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Logic	2	..	..
Psychology	..	2	..
Philosophy of the inductive sciences	..	..	2
Business law	..	..	2
Electrical engineering	2	2	2
Electrical laboratory	6	6	6
Geology	3	3	..
Designing	6	6	6
Hydraulic engineering	4	..	..
Sewerage and drainage	4	..	..
Roads, streets, and pavements	..	3	..
House drainage and sanitation	..	3	..
Engineering contracts and specifications	..	2	..
Heating and ventilation	..	..	3
Chemical analysis of water supplies	..	..	4
Bacteriology	..	..	2
Thesis	3	3	3
Optional—			
Mathematics	2	2	2
Inspection visits	..	..	..

ARCHITECTURE.

FRESHMAN YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
College algebra and elementary calculus	5	..	..
Analytical geometry and elementary calculus	..	5	5
French	3	3	3
Descriptive geometry	5	5	5
Shades and shadows	..	3	..
Graphic statics	..	..	3
Modelling in clay	..	..	2
Design and description	..	..	5
Elements of architecture and rendering	16	16	12
Optional—			
English composition	2	..	..
Rhetoric	..	2	..
Literature	..	..	2

SOPHOMORE YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Calculus	5	5	..
Differential equations	..	..	5
History of architecture	1	1	..
Composition of ornament	..	..	1
Graphic statics	3	3	..
General construction	3	3	3
Perspective	2	2	..
Freehand drawing	1	1	..
Water colours	..	..	2
Sanitary engineering	..	..	1
Architectural design	12	12	17
Optional—			
Nineteenth century history	2	..	..
Constitutional history of the United States	..	2	..
Economic history of the United States	..	..	2
Inspection visits	..	..	..

JUNIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Mechanics	3	..	..
Strength of materials	..	4	..
Heating and ventilation	..	..	4
Advanced architectural history	1	1	..
Theory of architecture	..	..	1
History of ornament	1	1	..
Steel construction	..	..	1
Pen and ink: water colours	4	4	..
Outdoor sketching	..	..	2
Electricity	..	..	4
Architectural design	18	18	16
Optional—			
Economics	2	2	2
Inspection visits	..	..	..

SENIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Architectural engineering	3	3	..
Specifications	1	..	..
Interior decoration	2	..	..
Freehand drawing	2	..	..
Restorations from antique architecture	..	2	..
Architectural design	20	18	20
Thesis	..	..	..
Optional—			
Logic	2	..	..
Psychology	..	2	..
Philosophy of the inductive sciences	..	..	2
Business law	..	..	2
Inspection visits	..	..	..

COURSE IN SCIENCE.

FRESHMAN YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
College algebra and elementary calculus	5	..	..
Analytical geometry and elementary calculus	..	5	5
Analytical chemistry	6	6	6
Descriptive geometry	5	5	5
Carpentry and turning	6	..	..
Pattern making	..	6	..
Chipping and filing	..	..	3
French	3	3	3
Scientific German	2	2	2
English composition	2	..	..
Literature	..	..	2
Rhetoric	..	2	..

SOPHOMORE YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Calculus	5	5	..
Physics	5	5	5
Differential equations	..	..	5
Nineteenth century history	2	..	..
Constitutional history of the United States..	..	2	..
Economic history of the United States..	..	..	2
Inorganic preparations	6	6	..
Chemical technology	..	..	6
Optional	10	10	10

JUNIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Physical laboratory	3	3	3
Economics	2	2	2
Optional	25	25	25

SENIOR YEAR.

Subject.	Hours per Week.		
	Autumn Term.	Winter Term.	Spring Term.
Logic	2	..	..
Psychology	..	..	2
Philosophy of the inductive sciences .	..	2	..
Optional	28	28	28

NOTE.—In this course the optional subjects may be selected from mathematics, physics, chemistry, economics, mechanical, electrical, or civil engineering.

The situation of the Institute enables the instructors and students to visit the various power plants, factories, and mills where practical use is being made of the principles taught in the class-room and workshop.

The equipment of the laboratory includes a 100-ton Riehlé testing machine, a 20-ton Olson, a 10-ton Riehlé, a Thurston auto-

graphic torsion machine, extensometers, a fine outfit for cement testing, including a Riehlé testing machine, and an Olson torsion machine. The laboratory is also supplied with apparatus for calibrating gauges, indicator springs, and the like.

The Institute power plant, which is utilised in connection with the laboratory work in steam engineering comprises a 22-inch by 48-inch Hamilton Corliss engine; four Sterling boilers of 250 horse-power each, used for power and heating purposes; three feed pumps; a vertical engine driving a complete system of coal and ash conveyors, installed by the Link Belt Machinery Company; a 6-inch by 8-inch horizontal Porter engine, which drives a blower and ventilator, and a hydraulic elevator plant, comprising a Worthington duplex steam pump, a tank, and other accessories. An opportunity is afforded to study the operations of the two existing systems of steam heating: the Webster vacuum system, used in the Institute building; the Paul system, used for heating the adjoining Armour apartment buildings.

A room has been fitted up with an experimental compound engine and condenser, a high-speed single engine, a hot-air engine, a gas engine, and other appliances for conducting the tests in the senior year.

The laboratory possesses a number of indicators, speed counters, tachometers, thermometers, planimeters, throttling and separating calorimeters, and an Emerson transmission dynamometer.

A hydraulic laboratory is equipped for determining the flow of water through orifices and weirs of different forms, and the coefficient of discharge through nozzles, and for testing water motors.

Workshop equipment.

The wood-working and pattern-making shop is equipped with 21 12-inch wood lathes fully provided with turning tools of different shapes and sizes; 21 benches and vices, with a full set of hand tools for each bench.

The forge shop equipment consists of 12 power forges of the Buffalo Forge Company's manufacture, a 200-lb. Bement and Miles steam hammer, a crane for handling heavy work, and a Brown and Sharpe annealing furnace.

The machine shop, which occupies a floor space of 54 by 60 feet, is furnished with the best modern tools. The equipment consists of 13 engine lathes of different sizes, namely: one 16-inch Brown and Sharpe, one 16-inch Pratt and Whitney, two 13-inch Brown and Sharpe, one 16-inch Flather, one 16-inch Putnam, one 14-inch Flather, one 22-inch Flather, one 26-inch Blaisdell, one Brown and Sharpe improved hand lathe, and three 8-inch speed lathes. The first six lathes have taper attachments. The machine shop also contains one Brown and Sharpe universal grinder, one Brown and Sharpe surface grinder, one Brown and Sharpe cutter and reamer grinder, one diamond grinder.

In drill presses the equipment is complete, being composed of one Slater sensitive, one No. 1 and one No. 2 Putnam improved presses. There are also three milling machines, a screw machine

a 30-inch iron planer, two shapers, a horizontal boring machine, and 30 bench vices, each equipped with one drawer of hand tools, squares, calipers, dividers, hand hammers, and one dozen files of different sizes and shapes. The tool-room equipment includes all the tools necessary for working in iron, steel, and brass.

The department of electric engineering is most elaborately provided for, and the students of this course have already shown themselves capable of very good work.

At present there are equipped the main laboratory, a well-lighted room 52 by 64 feet, a galvanometer laboratory for advanced measurements, a laboratory for magnetic measurements and insulation tests, and a dynamo and motor laboratory.

The equipment of the department is elaborate, and the apparatus is of the highest grade of excellence and adaptation. The recent additions to the dynamo equipment are a 25 kilowatt 140 cycle alternator made by the Fort Wayne Electric Corporation; and a 60-pole, 100-kilowatt, 110-volt generator, made by the Western Electric Company. A Russell high-speed engine, with cylinder 11½ inches by 14 inches, has also been added to the generator plant.

The units of resistance being fundamental for all electrical measurements, neither pains nor expense has been spared to secure a complete and accurate list of standards. The standard resistances have been calibrated at the Phys. Reichsanstalt, the Cavendish Laboratory, and by comparison with Johns Hopkins University standards. The majority of the standards are in terms of the International Ohms, but the older B. A. and Legal Units are also represented. The list includes 9 units, 5 tens, 3 hundreds 3 thousands, and fractional resistances to the 0·0001 of an ohm. Additional standards for special work are added from time to time. Resistance boxes of various types have been provided to the extent of 37 pieces. For measurements of the highest accuracy there are available an Anthony type Wheatstone bridge, two No. 2 resistance boxes, two 100,000-ohm boxes, and one $\frac{1}{111}$-ohm box, made by Queen and Co., an extremely accurate Wheatstone box and one Megohm by Nalder Brothers, a subdivided Megohm and a 100,000-ohm box by Hartman and Braun. In addition there are 100,000-ohm boxes, various types of Wheatstone bridges, and simple resistance boxes by Paul, Nalder Brothers, Elliott Brothers Hartman and Braun, Queen and Co., and Creeley and Co. Of special resistances there is a potentiometer by Nalder Brothers, another by Hartman and Braun, and a third from the Reichsanstalt collection.

For galvanometer work there are available 72 pieces, the collection being representative of the leading types of the best makes. There is a Lodge 8-coil and five Thomson 4-coil types, two ballistic galvanometers of the adjustable bell-magnet type, and several tangent galvanometers of various diameter of coils. Special prominence is being given to the use of D'Arsonval galvanometers, of which a large number are available.

For comparison of resistances there are seven Carey Foster

commutators. For use with these is a large number of slide wire bridges, including a fine cylindrical wire bridge and the University Bridge by Queen and Co. A set for the measurement of the conductivity of rods and bars by Queen and Co. has been added recently. In the collection of electrometers are a Mascart, a Ryan-Mascart, an absolute electrometer by the Société Genevoise, and several of the quadrant type. Of special apparatus there are a secohmeter and standard of self-induction, a Thomson and a constant potential rheostat, and several earth-inductors. There are at present in the photometric laboratory two Bunsen photometers, a 2½-meter photometer by Schmidt and Haensch, fitted with a Lummer-Brodhun box, a Leonard-Weber photometer, and a number of standard lamps.

The equipment of special apparatus for the measurement of electrical pressure, current and power is unusually extensive, comprising, as it does, virtually all the leading types. There are a centi-ampere, a composite, a hekto-ampere and an alternating current kilowatt Kelvin balances, Siemen's electro-dynamometers of a variety of ranges, and electric-dynamometric watt meters.

On account of the well-known accuracy of the Weston instruments they have been adopted exclusively for general laboratory practice. The equipment numbers about 40 pieces, and comprises the laboratory standard type of volt and ammeter; millivoltmeters and voltmeters for direct and alternating currents; milliammeters and ammeters for currents to 1,500 amperes, and a number of watt meters of different ranges. In addition there are a large number of voltmeters and ammeters for study and comparison illustrating the leading systems in use for laboratory and central station practice. The list of electricity-meters and power-meters is also large, and representatives of the types in general use for direct and alternating currents.

Of transformers there are a large number by leading makers, ranging from 5 to 400-light capacity. This equipment receives additions from time to time. The facilities for the study of the storage battery are excellent. There is a battery of 60 100-ampere-hour cells connected to a special testing commutator and used for laboratory measurements.

The dynamo and motor equipment is extensive and embraces a wide range of sizes and types. Several motors are in constant use, furnishing power for a variety of purposes, thus enabling the student to study their practical installation and operation. The list of continuous current motors includes one 30 horse-power and one 20 horse-power Westinghouse multipolar type, one 10 horse-power Perret, one 5 horse-power Crocket-Wheeler, two 2 horse-power Wagner multipolar type, and a number of smaller sizes. In addition there is a combined dynamometer set for charging storage batteries, and a motor transformer for electromotive forces up to 1,200 volts, used for calibration and insulation tests.

The generating plant for the Institute contains one 110-volt 50-kilowatt C. and C. dynamo and one 60-cycle 45-kilowatt

Westinghouse alternating current dynamo. These are connected to a handsome distributing switchboard equipped with all the usual appliances. These generators are driven by a 22-inch by 48-inch Hamilton-Corliss engine by a system of rope transmission. In connection with the alternating current lighting system a full complement of transformers is installed. The dynamo equipment for testing purposes includes at present one 25-kilowatt Fort Wayne alternator of 16,000 alternations, one Wagner 4-kilowatt alternator of 8,000 alternations, one Standard arc dynamo and one Thomson-Houston arc dynamo, each of 10-ampere 20-light capacity, with full equipment of lamps and accessory apparatus, one Westinghouse 4-kilowatt 500-volt generator, one C. and C. 4-kilowatt 110-volt dynamos, besides several smaller dynamos and exciters.

The polyphase apparatus includes three machines, one of 15 horse-power and two of 10 horse-power each. These machines were specially constructed for this department, and so wound that they may be used for either 2-phase or for 3-phase working.

The institute is indebted to the Chicago Rheostat Company for their recent gifts, consisting of one 3 horse-power Raster starting box, one 30 horse-power Raster starting box, and seven resistance boxes.

The Institute is indebted to the McIntosh Battery and Instrument Company for two Jewell variable resistances.

Domestic arts.

The conveniences and equipment of the domestic arts department include commodious class-rooms, and all necessary appointments, and the kitchen is equipped for individual practice as well as for demonstration with coal and gas stoves and an Alladin oven. The dining room is supplied with glass, china, and linen.

The course covers two years with a fee of 15*l.* per year, but any part may be taken at fees from 1*l.* to 4*l.*, and includes instruction in plain sewing, dressmaking, and millinery, lectures on art, textiles, and weaving, lectures on the chemistry of dyeing and cleaning, voice and physical culture, physiology and hygiene, psychology, history of education, normal methods and practice teaching.

Domestic science.

The domestic science course has the same terms and fees as the last, and includes chemistry, physics, biology, physiology, economic botany, psychology, history of education, hygiene, home nursing, dietetics, household economy, ventilation, home sanitation, cookery, normal methods, practice in teaching, and voice and physical culture.

Lewis Institute.

The Lewis Institute was founded in accordance with the provisions of the will of the late Allen C. Lewis, and in November 1895, 333,334*l.* was handed over to the trustees. Land was bought at a cost of 35,208*l.* and school buildings erected, which have since been added to, and an engineering school built this summer.

The fees are 4*l.* per quarter of 12 weeks with a reduction for night classes and special courses.

There is a preparatory class attended by 500, and 200 are

receiving instruction in the technical school, and of these half are girls.

The school of engineering teaches mechanical and electrical engineering in a four years' course, which comprises work in wood, pattern, foundry, forge and machine shops, drawing, design, sketching, applied mathematics, electrical and mechanical engineering laboratories.

The night classes are very largely attended by young men who generally wish to perfect themselves in a trade or who consider that a better literary education will be an advantage to them, and there are also half-day courses with the same view. Those who attend these two classes are employed in some way during the rest of the day.

About 200 students take chemistry, and the ages at entering the school are like all the others, 19 for the technical and 14 for the preparatory classes.

40 regular and 30 night and occasional teachers are employed at salaries, for the first class, of 160*l.* to 600*l.* per annum, and, for the second, 8*s.* 2*d.* to 1*l.* per night.

The engineering laboratory is equipped with a 200,000-lb. Olsen testing machine, transverse and impact Keep machines for cast-iron, a ynamograph for cast-iron, a 30 horse-power return flue boiler arranged for natural or forced draft, Wheeler surface condenser, 23 horse-power Sprague electric motor, 35 arc light dynamo, a 5 kilowatt 2 phase alternator, a 5 kilowatt rotary transformer, 5 kilowatt direct current Wenstrom generator, 1 horse-power Eddy motor, 3 horse-power Northern electric motor, 3 horse-power Lundell motor, four 50-light transformers with 3 to 2 or 2 to 3 phase connections, storage battery of 60 cells of 480 ampere hours capacity, various types of dynamometers, absorption and transmission gauge testers, injectors, &c.

The engines and generators are so connected that either or both may be used on the different light and power circuits. The larger unit is a Ball and Wood tandem compound 10 by 18 by 12, directly connected to a Siemens and Halske 60 kilowatt generator. The smaller unit is a Skinner engine 12 by 15, belted to a Westinghouse 33 kilowatt generator.

The foundry includes a 22 by 42 rattler, shovels, riddles, rammers, bellows, trowels, sticks, &c. A cupola, 16 inches inside lining, suspended from the ceiling upon roller-bearing trunnions, affords practice in the details of cupola management and melting. An iron oven heated by gas is used for baking the cores.

The forge and wood shop are supplied with all the necessary forges and benches and tools.

The machine shop contains 22 vices, 12-inch engine lathe with draw chuck, seven engine lathes of different sizes, sensitive drill, screw machine, crank shaper, planer, universal grinding machine, &c.

Domestic economy.

The domestic economy course includes cooking (the kitchen is fitted up for 16 students), sewing, dress-making, sanitation, chemistry, and food analysis.

Great attention is also paid to gymnastics and games; there are separate well equipped gymnasiums for boys and girls, tennis court and playground.

The following is a copy of the balance sheet of the Institute since its foundation :—

	Years ending June 30—				
	1897.	1898.	1899.	1900.	Estimate, 1901.
	£	£	£	£	£
Total cost of building, grounds and equipment	93,947	97,533	103,862	105,049	...
Annual expenditure for—*					
Grounds	33,800	...	2,000	...	...
Building	48,093	1,005	460	127	...
Equipment	12,054	2,582	3,869	1,060	...
Total for permanent improvements	93,947	3,587	6,329	1,187	...
Annual expenditure for—					
Instruction	6,641	8,924	10,181	10,318	11,400
General expenses	1,890	2,055	2,352	2,805	2,300
Other	1,876	2,092	2,708	3,036	2,500
Total for maintenance	10,407	13,071	15,241	16,159	16,200
Annual budgets—					
General expenses	970	1,055	1,272	1,145	1,000
Administration	920	1,000	1,080	1,360	1,300
Instruction	6,641	8,924	10,181	10,917	11,400
Library, shops, &c.	6,449	3,011	3,874	1,731	1,400
Building and ground	4,559	2,905	3,101	2,375	2,400
Total annual expenses	19,539	16,895	19,508	17,528	17,500
	Number.	Number.	Number.	Number.	Number.
Total enrolment in day class	434	545	614	700	750
Average attendance, full fee	268	365	421	520	575
,, half fee	67	92	89	40	50
Total in evening classes	260	520	775	1,190	1,000
,, summer ,,	...	...	40	136	200
	£	£	£	£	£
Total receipts for tuition	3,912	5,503	6,965	7,980	8,500
Percentage of cost of instruction paid by pupil	Per cent. 59	Per cent. 62	Per cent. 68	Per cent. 69	Per cent. 75
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Cost per pupil	26 6 7	16 10 6	14 4 5	8 18 2	...

* 1897 includes previous expenditure.

A very large number of business schools have come into existence in the past few years although the first was started about 25 years ago, and there are now four large and numerous small schools in Chicago which are all private ventures. Business schools.

Many teachers and business men in the United States find one fault with these institutions in that they are inclined to encourage young people to leave school early and not complete their general education, and that the want of secondary education to a man in business cannot be replaced by any practical or theoretical business knowledge.

The National Association of American Bankers have realised this it appears, and are planning a course of lectures for bank

clerks which will help to fit them for higher positions in their profession.

Formerly in a country which was increasing rapidly in every way there was room for men in business whose education was only elementary, but now a man or woman must be able to use the brain to the best advantage, and this can only be trained by education.

The business colleges have slightly different methods, but as a rule their system includes tuition in: modern languages, Latin, Greek; fees 2*l.* for each language for three months.

Preparatory course: fees for three months, 4*l.* to 6*l.*; six months, 7*l.* 10*s.* to 10*l.*; 12 months, 12*l.* to 18*l.*

The course includes arithmetic, grammar, writing, rapid calculations, reading, spelling, letter writing, history, geography, German.

The students in this class are about 14 years old and remain in the class about one year.

Business course: fees for three months, 5*l.* 10*s.* to 6*l.*; six months, 10*l.*; 12 months, 17*l.* to 20*l.*

The course includes book-keeping, penmanship, commercial arithmetic, commercial law, spelling, grammar, rapid calculations, letter writing, composition, business forms, business practice in wholesale, retail, commission, banking, real estate, insurance and shipping.

Shorthand course: fees, 5*l.* 10*s.* to 6*l.*; six months, 10*l.*

Shorthand, typewriting, spelling, grammar, letter writing, composition, business forms, letter press copying, indexing and letter filing, manifolding, mimeographing, office practice and book-keeping.

In some schools individual teaching is given in shorthand while in others class teaching is used and all the large schools have a regular system of practical work in a department fitted up with banks and offices with all the equipment of a first-class business house.

The average length of study in the shorthand course is five months and in the business course eight months.

The equipment of a business school to accommodate 700 students costs about 3,000*l.*, and the teachers, about 20, are paid from 120*l.* to 160*l.* for women, and 180*l.* to 350*l.* for men.

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